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ABSTRACT

The study examined correlates of self-esteem in 54 adolescents and young adults (ages 12-22) with spina bifida. Core issues identified were the relationships of global self-esteem and perceived competencies in specific areas, perceptions of control, and identification with the physically handicapped. Relationships of self-esteem to age, gender, and school placement were also explored. Self-esteem was measured by both self-report rating scales and behavioral ratings by teachers and parents. An introductory chapter discusses theories on self-esteem and reviews related research. Among reported results are the following: (1) Adolescents with spina bifida, like nondisabled adolescents, rated their own self-worth in congruence with the cultural norms for their gender. (2) Ratings of physical competence and appearance correlated with a self-report measure of self-esteem, but not with parental observations. (3) Self-ratings of competence were related to self-esteem, while teacher rating were not. (4) There was no corrleation between positive attitudes toward the disabled and self-esteem. (5) Older adolescents perceived significantly less internal control over events than did younger ones. In general, there were some gender differences in the correlates of self-esteem. The findings of the study were inconclusive about trends in self-esteem. References and seven tables are provided. (JW)

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CORRELATES OF SELF ESTEEM IN ADOLESCENTS WITH SPINA BIFIDA

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in partial fulfillment of the
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ABSTRACT

The present study is a cross-sectional exploration of the correlates of self esteem for young men and women between the ages of 12 and 22 who have a physical disability, spina bifida. All subjects completed standardized measures of self esteem, perceived competence, perceptions of control, and identification with the physically handicapped. Their parents completed an observer measure of self esteem, and their teachers rated their "actual" competence in several skill areas. Degree of physical disability, school type (elementary, junior high or high school), and classroom type (regular or special) were also variables. Age and gender differences were of interest.

The results indicated that, in general, adolescents with spina bifida who felt more competent in various skill areas, felt that positive events in their lives were under their control but that negative events were not their fault, did not feel controlled by unknown forces or powerful others, and did not mind being associated with others who had physical handicaps tended to have higher self esteem. No relationship was found between self esteem and degree of disability. Teacher ratings of competence were not as closely related to self esteem as self ratings of competence were. Perceptions of internal control were negatively correlated with age. There were many gender differences in the correlates of self esteem. Although this is a cross-sectional study and cohort effects cannot be ruled out, some age related trends in self esteem were suggested.

Girls and boys with spina bifida showed correlates of self esteem which were related to traditional sex role expectations in our culture. For girls, sociability and kindness were closely tied to self esteem, while for boys, physical competence and internal control of events were more important. This may have an effect on the development of self esteem in this population. A significant interactive effect on self esteem was found for age and gender. For girls, self esteem scores were higher as age increased. This is consistent with studies of nondisabled populations. For boys, self esteem decreased with age. It was hypothesized that the tasks of adolescence which are more important to girls (affiliation) are less disrupted by a physical handicap than are the tasks which are more important to boys (achievement). The results were discussed in terms of theory and implications for future research.

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INTRODUCTION

The present study is a cross-sectional exploration of the correlates of self esteem for young men and women between the ages of 12 and 22 who have a physical disability, spina bifida.

Self esteem in this study was measured by both a self-report and a behavioral measure. The core issues are the relationships of global self esteem and perceived competencies in specific areas, perceptions of control, and identification with the physically handicapped. Relationships of self esteem to age and gender are also explored. Comparisons are made to an earlier study of preadolescents (ages 8-12) with spina bifida (Eckart, 1986).

The relationship of self esteem to school type (elementary, junior high or senior high school) and to special or regular class placement is also noted. Teacher ratings of the child's competence in several skill areas is compared to the child's self-rating, as well as to the self esteem measures. Finally, the relationship between self esteem and the degree of the adolescent's disability is investigated.

SPINA BIFIDA

Spina bifida, technically known as myelomeningocele, is a birth defect which results when a child is born with an

opening, or lesion, in the spinal cord. This often leaves the nerves uncovered, and various degrees of sensory and motor impairment below the level of the lesion will result. The degree of disability which the child will experience is related to the spinal level of the lesion. Higher spinal lesions result in more severe disability.

A child with spina bifida will have difficulty walking. Some use braces, crutches, or a walker; others depend on a wheelchair for mobility. Incontinence is also a common problem, and many children with spina bifida rely on catheterization to achieve bladder control. Most children born with spina bifida will function in the average range of intelligence, although some will have a mild degree of mental retardation. Recent studies have shown that children with spina bifida are more likely to experience learning disabilities than are other children (Shaffer et al., 1984).

Spina bifida is one of the most common birth defects, second only to mental retardation in this country (Tew & Laurence, 1985). Because it can be associated with severe disability as well as many complications (such as frequent orthopedic surgery or urinary tract infections), until the 1960's most children born with this disorder did not reach adulthood. However, rapid advances in medical technology since the 1960's have resulted in earlier and more effective intervention for children with spina bifida. As a result,

more people with this disorder are reaching adulthood now than ever before (Leonard & Freeman, 1981; Shurtleff, 1980).

Parents of children with spina bifida have many questions about what life will be like for a person with this disability. They often express concerns about their child's psychological adjustment. Many worry specifically about the development of self esteem for a child with a physical disability.

Very little research has been done which addresses the issue of self esteem development for children with handicaps of any kind. A recent study (Eckart, 1986) examined the correlates of self esteem for preadolescent children with spina bifida. The results of this study suggest that for children with spina bifida, personality factors such as feelings of competence, control, and identification are correlated with self esteem, while degree of disability, IQ score, and behavioral ratings of the child's skills are not. The study also showed a negative correlation of self esteem and age within this group. Boys and girls with spina bifida were more likely to have lower self esteem as their ages approached adolescence.

The present study is an extension of this research. It addresses the correlates of self esteem for adolescents with spina bifida and explores age and gender related trends in

self esteem. It seeks to answer questions such as, What is related to good self esteem for a young person with spina bifida? How does a child with this disability who has high self esteem differ from one who has low self esteem? How does this relationship change as the child grows older? Is the process the same for males as for females?

DEFINING SELF ESTEEM

The first step in a study of self esteem is to define what is meant by this term. The concept "self esteem" is one that is frequently used in both clinical and research settings. However, an examination of the literature will reveal that there are subtle differences between the many definitions of this term.

Rosenberg, one of the foremost researchers in the area, defines self esteem as, "The individual's global positive or negative attitude toward himself" (Simmons, Rosenberg, and Rosenberg, 1973). He emphasizes the unidimensional nature of this construct, and focuses on subjective feelings about the self.

In contrast, Coopersmith (1967) focuses on the determinants of self esteem, which include judgements about efficacy. Coopersmith defines self esteem as "an attitude of approval or disapproval a person maintains toward him or

herself, expressing the extent to which he or she feels capable, significant, successful, and worthy" (pp 4-5).

Gecas (1982) states that self esteem deals with both the evaluative and the emotional dimension of the self concept. He distinguishes between self esteem based on "competence, power, or efficacy" (self efficacy) and that based on "a sense of worth" (self worth).

Wells and Marwell (1976), in a review of the self esteem literature, make a similar distinction. They define self esteem as "The evaluative, judgmental, or affective aspect of a person's self-conception." They state that the many definitions of self esteem vary along two dimensions: evaluation, and affection or acceptance. Although these are related, they express slightly different concepts. It can be seen that Rosenberg's definition of self esteem deals more with the affective dimension, acceptance of the self, while Coopersmith's definition deals somewhat more with evaluation of one's skills and status.

In the present study, a distinction will be made between the evaluative (self efficacy) and emotional (self worth) aspects of self esteem. Self esteem will be defined as the affective component of the self concept. In other words, "self esteem" refers to how much one likes oneself or feels accepting of oneself. The evaluative component of self

concept will be referred to as "self perceived competence."

Although it is expected that these two types of feelings about the self are closely related, it is also expected that self evaluations in different areas of a person's life will affect global self esteem differently. Theory concerning the relationship of global self worth to self efficacy will be elaborated further in the discussion of theories of self esteem.

MEASUREMENT OF SELF ESTEEM

Having defined the term "self esteem," the researcher is now faced with the problems of measuring it. Self esteem, when defined as "how much one likes oneself, or feels accepting of oneself," is an internal or subjective state, and is therefore not available for direct measurement.

Most studies of self esteem operationalize the concept by using a score on a "self esteem" measure, most often a self report instrument (Wylie, 1974). Wells and Marwell (1976) point out that researchers often fail to remember that there is a distinction between the concept of self esteem and the measure of self esteem. They hypothesize that many of the discrepancies in the self esteem literature can be accounted for by making this distinction. In other words, different researchers use different measures, which lead to different

conclusions.

Wells and Marwell caution that a researcher should not confuse a self esteem score with actual self esteem. Responses on self-report measures of self esteem can be seen in different ways. They can be accepted as more or less accurate reflections of a person's self feelings, or they can be considered behaviorally, as a form of self-behavior which is related to other behaviors. Wells and Marwell state that self reports of self esteem are most often "not taken to be identical with self perceptions...but as forms of behavior in which these are fairly directly and reliably manifested." (p.80). In other words, a score on a self report measure is assumed not to be identical to self esteem, but to be closely related to self esteem.

This assumption, which is often necessary in self esteem research, should not be made uncritically. Wylie (1974) criticizes much of the self esteem literature on the grounds that many scales used to measure self esteem are of questionable validity. She states that many have low internal reliabilities, and that correlations among self esteem measures range from zero to .81, with an average of .40. Those with low internal reliabilities cannot measure a construct reliably. Others may have good internal reliability, but no convergent validity, so that it is not clear what they are measuring. After reviewing hundreds of

studies, Wylie concluded, "either there is no such measurable dimension as self esteem, or at least some of the scales purporting to measure this construct are doing a poor job of it." This underlines for the researcher the importance of using a measure with proven reliability and validity, as well as keeping in mind that the conclusions of a study are based on self esteem scores, not "self esteem."

Even if a researcher is careful to use a scale with adequate internal reliabilities and convergent validity, a self report measure can, at best, tap into only one facet of self esteem.

SELF REPORT VS. OBSERVED SELF ESTEEM

Coopersmith (1959) distinguished between two indices of self esteem, the subjective (self-report) and the behavioral (rating by an observer). He stated that in order to describe a person's self esteem, a composite picture of both is needed. Self report may be either an accurate reflection of the person's feelings of acceptance and worth, or an inaccurate one prompted by "defensiveness." Likewise, a rating of self esteem based on the individual's behavior may reflect either a true picture of the individual's self-evaluation, or a "false front" presented by the individual. A good assessment of self esteem, according to Coopersmith, would include both measures. However, as noted above, most

studies of self esteem have included a self report measure only.

Recently, Savin-Williams and Demo (1983) and Savin-Williams and Jaquish (1981) have brought renewed interest to the evaluation of self esteem through both self report and behavioral measures. They refer to what is measured by the first as the "experienced self" and to the other as the "presented self." These researchers state that assessment of self esteem should be done with several different measures in order to give a more accurate rating of self esteem.

However, they note that this approach can often raise as many questions as it answers. If measures of the experienced self and the presented self are both measures of self esteem, they should correlate highly with one another. Savin-Williams and Jaquish (1981), however, found no correlation between the two measures in their study. They note that other studies (e.g. Michael et al., 1973) have also failed to find any relationship between measures of experienced and perceived self.

An extensive review by Wells and Marwell (1976) showed that the majority of studies of this type found no reliable relationship between observed and self reported self esteem. Wells and Marwell, like Coopersmith, hold that behavioral and self report measures of self esteem do not always correlate

because they assess different aspects of the self.

In the present study of adolescents with spina bifida, both a self report measure and a behavioral measure of self esteem were employed. In addition, an observer rating of the adolescents' competence in different areas was obtained, and compared to the self-ratings of competence. This provides data on the relationship between the adolescents' self report of self esteem and the way that this is reflected in their behavior.

THEORIES OF SELF ESTEEM DEVELOPMENT

In this study, self esteem is defined as liking of, or acceptance of, oneself. This is distinguished from the "evaluative" dimension of the self concept, which deals with perceptions of competence. Although it is expected that these two types of feelings about the self are closely related, it is also expected that self evaluations in different areas of a person's life will affect global self esteem differently.

This idea is expressed by both Rosenberg and Coopersmith in their respective theories of self esteem. Rosenberg (1979) sees self esteem as global, but as based on judgements about different facets of the self. All of these facets are not equal in value in their influence on self esteem. For

example, boys in elementary school may value physical prowess above academic skills, while graduate students in psychology might be expected to hold an opposite view. In Rosenberg's model, an individual's judgements about the different aspects of the self are "weighted" according to their value to the person, and then summed together to form a global sense of self worth. This model holds that evaluative self esteem, o perceptions of competence, come before and are necessary to the development of global self acceptance.

Coopersmith (1967) expressed a similar idea in his theory of the development of self esteem in children. His theory was based on a study which involved nearly 2000 boys between the ages of 8 and 12.

He listed four major factors which he felt contributed to the development of a child's self esteem: 1) respectful, accepting, and concerned treatment from significant others, 2) history of successes and failures, including status in a peer group, 3) values and aspirations, and, 4) one's manner of responding to devaluation, or ability to defend self esteem.

Coopersmith states that "The process of self-judgement derives from a subjective judgement of success , with that appraisal weighted according to the value placed upon different areas of capacity and performance, measured against

a person's personal goals and standards and filtered through his capacity to defend himself against presumed or actual occurrences of failure" (1967, p.242). Coopersmith showed that for boys at ages 8-12, competence and status played the largest role in self concept formation. As in Rosenberg's model, perceptions of success and feelings of efficacy are necessary to the development of self esteem.

Harter (1978) proposes a slightly different view of self esteem development. She states that self perceived competence is the central aspect of self esteem. Her theory is based on White's (1959) theory of "effectance motivation." Effectance motivation is conceptualized as being a drive, or an "urge toward competence." According to White's theory, effectance motivation compels an individual to carry out new behaviors. Doing so satisfies the drive toward competence. The outcome of the behavior, success or failure, determines whether or not the individual will <u>feel</u> competent. A feeling of competence leads to enhanced self esteem, which in turn leads to new behavior. Again, self-evaluations of competence lead to the feeling of self acceptance or global self esteem.

Harter views self esteem as a multidimensional construct. Perceived competencies in various areas of a child's life show both developmental and individual differences and should be assessed separately. Harter's early work (1978) described 3 basic skill areas - cognitive, social, and physical - as

well as a general or "global" feeling of self worth. More recently, (Harter, in press), she has added perceived "adequacies" in physical appearance and behavior to her multidimensional assessment of children's self esteem. A lack of perceived competence in any of these areas puts a child at risk for lower global self esteem.

These models of self esteem differ slightly in their emphasis on self esteem as a unitary construct or as one composed of distinct facets. However, all have as a central theme the idea that children who do not evaluate their skills highly will have more difficulty sustaining positive self feelings.

These theories suggest why children with handicaps may have trouble with self esteem development, but also suggest a mechanism they might use to circumvent problems.

PRESERVING SELF ESTEEM

According to all of these models, a child with spina bifida who has difficulty achieving success in physical and social behaviors may have more difficulty than a nondisabled child in achieving the sense of competence that leads to self esteem. Research shows that children with physical handicaps may not experience acceptance from other children (McAndrew, 1979) and may not have the social skills needed to become a

valued members of peer groups (Gresham, 1982, McHale & Olley, 1982). Feelings of social competence, as well as social status, may suffer. In addition, competence in physical activities, as defined by the child's nondisabled peers, may be difficult or impossible to achieve.

All of these theories also suggest, however, that self esteem is a motive or drive, and that the individual will do what is possible in order to value the self. Rosenberg (1972) speaks of the "self esteem motive," while Harter (1978) refers to the "drive toward competence." Wells and Marwell (1976) observe that every theory of self esteem posits some variant of this motive.

In the theories listed above, it is not only perceived competence in various areas which influences self esteem, but the relative value which the individual places on each of these areas. Rosenberg and Simmons (1972) propose "value selectivity," or devaluing the domain where one has low status, as a mechanism which individuals use in order to protect self esteem.

Harter's theory states that perceived competence in one of several areas can promote global feelings of self worth. In a study of elementary school children, she found that children's judgements of their competence in different areas and their ratings of the importance of these areas varied

with self esteem. Children with the highest self esteem had the closest match between what they saw as important and what they did well. Children who felt that areas in which they could not do well were very important had the lowest self esteem (Harter, 1983). Fishman and Fishman (1971), in a study of 35 physically handicapped children between the ages of 8 and 14, found that those who were encouraged to develop those skills that were not limited by the handicap were the most well adjusted.

This suggests one possible way for the child with a physical disability to gain self esteem. Those who find it difficult to excel in one area, such as physical competence, may be able to compensate by accentuating skills in another area, such as cognitive or social abilities. Young people with spina bifida might be expected to downplay physical skills, and to see this area of competence as less important to their "self worth" than social or physical competence. This may preserve self esteem.

However, a previous study (Eckart, 1986) did not support this hypothesis. Eckart examined the correlations of the physical, social, and cognitive subscales of Harter's Perceived Competence Scale for Children with scores on the McDaniel Piers Young Children's Self Concept Scale in a group of 30 elementary school age children with spina bifida. She found that all three subscales correlated with global self

esteem for this group, and that perceived physical competence actually had the highest correlation.

It is interesting to note that in this study neither teacher ratings of the child's "actual" competence nor a measure of the degree of the child's disability correlated with self esteem to the degree that the child's perceived competence did. Eckart concluded that although feeling physically competent was important to a child's self esteem, it was the child's own definition of physical competence and not an "objective" view of his or her physical skills which made the difference.

Castree and Walker (1981) found a similar pattern for adolescents with spina bifida. Their study demonstrated that a child's perception of his or her disability had more impact on friendship patterns than did actual ambulation patterns.

The present study extended the previous research (Eckart, 1986) by examining the relationship between self esteem and perceived competence in social, cognitive, and physical skills, as well as perceived adequacies in appearance and behavior, for young people with spina bifida in two age groups: early adolescents (ages 12-14), and late adolescents (ages 15-18). It was hypothesized that perceived competence in all of these areas would relate to self esteem in adolescents with spina bifida. However, perceived physical

competence was expected to have the weakest relationship with self esteem. Gender and age differences in these relationships were also studied.

SELF AND OBSERVER RATINGS OF COMPETENCE

The relationship of perceived competence in various skill areas to observer ratings of competence was also explored. Research shows that people's perceptions of their own skills often do not correlate with ratings of these skills by others. Shrauger and Schoeneman (1979) reviewed over 50 studies dealing with this question. They concluded that although people's self perceptions agree with the way they think others view them, there is often little agreement between self perceptions and how people are actually rated by others.

Harter (in press) demonstrated this tendency with children, also. In her study, children with high self esteem were likely to rate their own skills more highly than did their teachers.

A previous study of children with spina bifida (Eckart, 1986) showed that although the children's perceptions of their own competence in various skills correlated with self esteem, there was no correlation between a teacher rating of the child's competence and the child's self esteem score.

Paired t-tests showed that the children's ratings of cognitive and social skills did not differ significantly from those of their teachers. However, the children rated their own physical skills significantly more positively than did their teachers. Eckart hypothesized that the children defined physical skills in terms of their own disability, (e.g., learning to walk with crutches) while the teachers defined them in terms of nondisabled students.

It was hypothesized in the present study that teacher ratings of the child's competence would not correlate as significantly with the child's self esteem as the child's own self rating of competence would. This would be consistent with the previous findings.

It was further hypothesized that only in the area of physical competence would child and teacher ratings of competence differ significantly when analysed using a paired t-test. Adolescents with spina bifida, like their preadolescent counterparts, were expected to rate their physical skills significantly higher than would their teachers.

THEORIES OF SELF ESTEEM IN ADOLESCENCE

The theories of Rosenberg, Coopersmith and Harter focus on

the development of self esteem in children. As children approach adolescence, the developmental tasks facing them change, and the determinants of self esteem may change also.

As children reach puberty, they must cope with the physical changes which physical maturity brings, and the implications of this in terms of sexuality and intimacy. They must also deal with their changing social roles which raise the issues of independence from parents, preparation for an adult vocation, and establishment of an identity separate from their families. Adolescence is also a time when an individual must learn to develop effective social and working relationships with same and opposite sex peers (Mussen, et al.,1979). These tasks, which are difficult enough, are made more difficult by the presence of a physical handicap (King, 1971, McAnarney, 1985).

Many theories predict self esteem disturbances as a "normal" part of development during the adolescent years. Erikson (1968) called adolescence "the last stage of childhood." He focused on identity formation as the central task for young people at this age. He theorized that adolescence is a time when young people struggle to define themselves in terms of the adult world, trying on different roles and seeking a sense of their own identity. Only when they can establish an identity can they go on to the adult task of becoming independent from their parents. Erikson's

theory has been popularized as the idea of the adolescent "identity crisis," and has had great impact on current thinking about adolescence as a time of upheaval and stress.

In contrast to Erikson's emphasis on the social and emotional tasks of adolescence, Piagetian theory focuses on the cognitive changes at this age. Piaget (1972) emphasizes the transition from the stage of concrete operations to formal operations, which begins around age 11 and develops fully around age 15 or 16. The development of formal operations of thought means that young people move from being able to think about the world only in terms of objects and concrete examples, to being able to think in terms of abstract theories and possibilities. They can "think about thought" and recognize that what they observe is only a small part of what is possible.

Elkind (1967) explains adolescent psychology in terms of Piagetian cognitive development. He states that the "egocentrism" of adolescence is related to the attainment of the stage of formal operational thought. This change in cognitive style enables the adolescent to conceptualize his own thoughts, as well as those of others. But, although the adolescent can now imagine the thoughts of others, he fails to differentiate between the focus of his own thoughts and that of others. His "egocentrism" lies in believing that everyone else is as concerned with his looks and performance

as he is.

This phenomenon is referred to by Elkind as the "imaginary audience," and accounts for the extreme self-consciousness common to adolescents. Elkind also refers to the "personal fable" of the adolescent, which is the belief that she is unique and special and that no one else feels as she does.

Kohlberg and Gilligan (1971) conceptualize the adolescent transition in terms of moral stages as well as cognitive development. This theory holds that the crux of the adolescent experience lies in both an "intensified emotionality" and a questioning of the validity of society's truths and values.

The first of these, intensified emotionality, is contingent on attaining Piaget's stage of formal operational thought. Prior to age 12, children see emotions as the objective result of activities and objects. For example, a child says he is angry because something was "bad." Formal operational thought, however, enables the adolescent to experience emotions as <u>subjective</u> states of the self. The adolescent discovers subjective feelings and moods, as well as ambivalence and conflicts of feeling. Kohlberg and Gilligan hypothesize that some adolescent behavior, from experimentation with drugs to immersion in popular music, is really an attempt to deal with this experience of heightened

emotion.

The attainment of the stage of formal operations is also a necessary condition for the moral development which Kohlberg and Gilligan see as underlying the second major change of adolescence, the questioning of social values.

Kohlberg's theory of moral development states that children develop from a "preconventional" stage based on seeking pleasure and avoiding pain, through a "conventional" stage dealing with reciprocity and the social basis of rules, to a "postconventional" stage where social standards can be questioned and the existence of "higher" laws is emphasized.

Kohlberg and Gilligan believe that the beginning of formal operational thought (around age 11 or 12) is necessary before a child can begin to understand the mutuality of interpersonal relations which characterizes "conventional" morality. As formal operational thought develops more fully (around age 15), the child can begin to question the universality of social rules and values, as she moves toward the "postconventional" stage of morality.

Adolescence is thus portrayed by many theorists not only as a time of physical change, but of change in social role, identity, cognitions, emotions, and values. Several writers have commented on the conflict between theories of adolescent

development, which predict changes in self concept, and empirical studies, which are divided on this point. Coleman (1977) and Ellis and Davis (1982) review the literature on this point and find instances of both stability and change. Some research supports the hypothesis that self esteem is in a state of flux during the years from 8 through 18, while other studies find that self esteem steadily increases during the teen years. Most researchers who find a self esteem disturbance during adolescence note a drop in self esteem between the ages of 12 and 14, with a subsequent rise in self esteem as the individual reaches adulthood.

STUDIES OF SELF ESTEEM IN ADOLESCENCE

Piers and Harris (1964), in their validation studies of the Piers-Harris Self Esteem Scale for Children, compared the self esteem of children in third, sixth, and tenth grades, and found that self esteem was lowest in the early adolescent group. They reported no significant difference in self esteem scores between children in grade 3 and grade 10, but the self esteem scores of children in grade 6 were significantly lower than in either of the other two groups. However, a more recent study by Wolf et al. (1982) using the same scale found that self esteem scores increased with age from age 10 through 17.

Simmons, Rosenberg, and Rosenberg (1973) performed a

cross-sectional study of self esteem among 1917 urban school children in grades 3 through 12. They found that early adolescents, especially those aged 12 or 13, had higher self consciousness, greater instability of self-image, lower self esteem, and a less favorable view of how they were perceived by others, than did young people in other age groups.

Blyth, Simmons, and Bush (1978) explored this relationship further with a longitudinal study of over 400 sixth grade students during their transition to a seventh grade class either in the same school or in a junior high school. They showed that self esteem increased between sixth and seventh grade for both boys and girls when the children attended an elementary school which housed grades K-8, although girls experienced lower self esteem than boys at each age. The pattern was very different for children in a junior high school setting. Here, the self esteem of girls dropped between sixth and seventh grade, while the self esteem of boys remained the same.

Simmons et al. (1979) in a similar study of 798 children going from sixth to seventh grade, also found this effect. In this study, early puberty was associated with lower self esteem for girls, but higher self esteem for boys. The researchers concluded that early adolescence was a time when individuals were more at risk for disturbances brought on by environmental and social change, and that the self esteem of

boys and girls showed different patterns in this age group.

Demo and Savin-Williams (1983) administered the Coopersmith Self Esteem Inventory to 830 students in grades 5 through 8. All were enrolled in K-8 schools. Their findings were consistent with those of Blyth, Simmons, and Bush (1978), showing a steady increase in self esteem with age in this group.

Savin-Williams and Jaquish (1981), and Savin-Williams and Demo (1983), explored self esteem in adolescents using several different indices of self esteem. They contrasted self reported self esteem, or "experienced self" to observer ratings of self esteem, or "presented self."

The researchers found little correlation between the two measures of self esteem. They noted that girls were lower than boys on the self report measure, but observers reported no behavioral differences in observed self esteem between boys and girls. The researchers noted that longitudinal self report measures showed little stability of self esteem between seventh and eighth grades, moderate stability between eighth and ninth, and significant stability between ninth and tenth grades. Rosenberg's Self Esteem Scale (Rosenberg, 1979) was administered to the subjects in ninth and tenth grades, and the two scores showed a significant correlation. However, the scale was not administered at the seventh and

eighth grade levels.

Savin-Williams and Jaquish, and Savin-Williams and Demo, concluded that their studies supported the basic notion of stability in self esteem during the adolescent years. However, their studies do point out some changes in self esteem during the early adolescent years.

Jaquish and Savin-Williams (1981) also looked at the correlation between pubertal maturation and self esteem. Forty seventh grade boys and an equal number of girls were assessed over 2 years by a self report self esteem measure. The sample was small and the researchers reported some correlations that were significant at the .10 level. The researchers found that pubertal maturation rate was correlated with self esteem in this group, and that the pattern differed between boys and girls. Boys who were more physically mature in the seventh grade had lower self esteem in the eighth grade, while the converse effect was found for girls. This is the opposite of the findings of Simmons et al. (1979) for adolescents in sixth and seventh grade.

Bachman and O'Malley (1977) administered Rosenberg's Self Esteem Scale (Rosenberg, 1979) to over 1600 young men in a longitudinal study which spanned 8 years. They found a steady increase in self esteem from age 15 on. However, they did not include in their study a measure of self esteem in

the early adolescent group, nor did they include young women.

Many of the discrepancies found in the literature on self esteem in adolescence may be related more to differences in the research designs and instruments used (Wells & Marwell, 1976) than to any real differences in conceptual findings. Taken as a whole, the literature does suggest that individuals in the early adolescent group, ages 12-14, are at risk for disturbance in self esteem. They appear to be susceptible to environmental stresses, such as the transition from elementary to junior high school, and the different pressures on males and females. This susceptibility can be related to a drop in self esteem. It is possible that a physical disability such as spina bifida may also put an adolescent at higher risk for self esteem disturbances.

SELF ESTEEM AND ADOLESCENTS WITH DISABILITIES

McAnarney (1985) describes how a physical disability may have an impact on the tasks of adolescent development.

In early adolescence, major physical changes occur with puberty. Identity formation, a major theme of adolescence, is closely tied to body image for young people at this stage. Those with physical handicaps may already have questions about the adequacy of their bodies, which may be exacerbated by the increased self awareness that comes with adolescence.

Pubertal changes may differ from the norm for children with spina bifida, increasing this risk. Young women with spina bifida reach menarche earlier than the norm, and both sexes may experience delayed growth while nondisabled peers are in the midst of a period of rapid growth (Hayden et al., 1979).

A major issue for those in this age group is the development of the first signs of independence from parents and family. Adolescents with physical handicaps may have difficulty establishing independence, both because of a real inability to accomplish some tasks, and also because of their family's tendency to protect a disabled member. Parents may find it hard to allow the disabled teen to develop some distance.

The disabled adolescent may also have concerns about peer relations. Many disabled adolescents are somewhat isolated, especially outside of school (Dorner, 1977). This may become a special concern to them in early adolescence, when the peer group gains importance as the primary reference group.

The issue of identity formation is of great importance as young people move into early adolescence. Erickson's theory of the development of identity in adolescence (1968) states that this is the age when an individual experiments with, or "tries on", different roles and identities. Kohlberg and Gilligan (1971) emphasize the heightened emotionality of the

adolescent, as well as the questioning of rules and social values.

Many adolescents challenge adult authority, and experiment with cigarette smoking, alcohol and drug use, or sexual activity. McAnarney (1985) points out that an adolescent with a physical disability may experiment in ways not available to the nondisabled teen, such as "forgetting" to take seizure medication or administering an incorrect dose of insulin "to see what it's like." Conversely, adolescents with disabilities may not have the usual avenues of adolescent experimentation open to them because of limited mobility or lack of peer contacts. McAnarney states that early adolescence may be the most challenging age for a young person with a disability, because identity formation and independence from the family may be so difficult to achieve.

The tasks of late adolescence include the development of mature sexual relationships and vocational goals. Most young people at this stage begin to plan toward eventually separating from their family and living on their own. Late adolescents with disabilities may have concerns about employment, marriage and sexual functioning (Dorner, 1976). They may find gaining independence from the family more difficult because of a greater reliance on the family for financial and personal assistance. Lack of accessible schools and workplaces may limit their choices (McAnarney,

1985), making the task of separation even more difficult.

Studies such as those reviewed in previous sections have investigated changes in self esteem during adolescence for nondisabled young people. However, few studies have investigated the relationship of self esteem to age in adolescents with a physical disability.

In a previous study of self esteem in 30 children with spina bifida between the ages of 8 and 12, Eckart (1986) found that age was negatively correlated with self esteem in this group. However, this study included only preadolescents and early adolescents.

In the present study, the relationship of self esteem to age in early and late adolescent young people with spina bifida was examined. The results were compared to the earlier sample of preadolescents. Since many studies have shown that young men and women differ in the pattern of self esteem development, the two groups were studied separately.

Self esteem was measured using both a self report measure and an observer rating. Comparisons were made between the two methods.

It was hypothesized that young people with spina bifida in the early adolescent group (ages 12 through 14) would have

lower average self esteem scores than those in the late adolescent group (ages 15 through 18). Differences in the pattern of self esteem development for males and females were investigated.

RESEARCH ON SELF ESTEEM AND CHILDREN WITH DISABILITIES

Most of the research which has been done in the area of self esteem and disability has focused on determining whether or not young people with disabilities differ from a control group in terms of self esteem. A review of this literature reveals no consensus. Some studies have found lower self esteem in the disabled group, while others have found no differences. In general, researchers have concluded that adolescents with disabilities show few differences in self esteem when compared to a control group. However, there may be some specific disabilities which are related to lower self esteem.

For example, Ostring and Nieminen (1982) administered the Coopersmith Self Esteem Inventory (SEI) to a group of 30 children with cerebral palsy, ages 9-13, and a control group of 34 nondisabled children ages 10-12. The groups were matched for family income and social status. Ostring and Nieminen found no group differences in self esteem scores.

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Kellerman, et al. (1980) administered Rosenberg's Self

Esteem Inventory (SEI), a State-Trait anxiety measure, and a Health Locus of Control (LOC) questionnaire to 168 adolescents in junior high and high school who had various chronic illnesses and handicaps including cancer, cardiac disease, diabetes, cystic fibrosis, renal failure, and rheumatic disorders. They compared their scores to those of 349 nondisabled students of the same age.

Kellerman et al. found no differences on the self esteem measure or the measure of anxiety between the disabled and nondisabled groups, or between the various disabled groups. They did note that females expressed significantly lower self esteem in both the disabled and nondisabled groups. Adolescents with certain disabilities perceived significantly less control (more external LOC) over their health than did the nondisabled controls. This was true for those with cancer, renal failure, cardiac disease, and rheumatic disorders. Adolescents with diabetes and cystic fibrosis showed no significant difference in health locus of control when compared to the control group.

The authors concluded that the adolescents in the chronic illness group demonstrated "psychologic normalcy," and that their concerns regarding control over health were probably realistic. However, they did note a negative correlation between self esteem and external locus of control.

Zeltzer et al. (1980) administered an original questionnaire designed to measure the impact of illness on an adolescent's feelings about relationships within the family, school and peer activities, independence and autonomy, perceptions of personal, social, and sexual functioning, future orientation, and effects of treatments. Although the adolescents with disabilities reported being "currently ill" more often than did the control group, a large number of subjects in each category who reported "no current illness." Surprisingly, about a third of the subjects in the nondisabled control group also reported being "currently ill." The impact of illness, as measured by the questionnaire, did not differ for the two groups. Both chronically ill and control subjects reported that restriction of freedom was the major disruption brought about by illness. Other areas of concern were relations with peers, siblings, and parents. Females in all groups reported more impact of illness on physical appearance than did males.

Some studies have found group differences in self esteem. For example, Pless et al.(1972) used the Piers-Harris Self Concept Scale for Children to compare the self esteem of 209 "chronically ill" children with 190 healthy children. They concluded that at all ages, children with chronic illness scored lower in self esteem than age matched peers.

Kumar et al. (1976) administered the Piers-Harris Self

Concept Scale, the California Test of Personality (CTP), and Sarason's General Anxiety Scale for Children to a group of 29 children with sickle cell anemia, ages 12-18, and 26 age and race matched controls. They found that the sickle cell group scored lower on the self esteem measure than did the controls. There was no difference on the adjustment measure of the CTP, and the group with sickle cell anemia actually scored lower on the anxiety measure than did the control group.

McAnarney, in her review of the literature (1985), states "Controlled studies comparing adolescents who have a chronic illness and those who do not suggest that as a group, chronically ill adolescents do not have lower self esteem. However, there are examples in the literature of specific groups of chronically ill adolescents...who have lower self esteem than controls." (p. 95). Several studies suggest that this may be true for adolescents with spina bifida.

RESEARCH ON SELF ESTEEM AND CHILDREN WITH SPINA BIFIDA

A study of 16 adolescents with spina bifida at a summer camp (Lutkemeier, 1979) showed them to have significantly lower scores on the Tennessee Self Concept Scale than the norms for children their age.

Campbell et al.(1977) compared the self esteem of 20

adolescents with spina bifida to that of 20 age matched controls with no physical handicaps, using the Offer Self-Image Questionnaire and the Tennessee Self Concept Scale. They found lower levels of adjustment and poorer self esteem for the adolescents with spina bifida than for nondisabled controls.

Dorner (1976) assessed 46 adolescents with spina bifida, ages 13-19, using semistructured interviews. He found that "some degree of misery" was "common" in this group, and more pronounced among young women than men. Dorner stated that the adolescents with spina bifida had many worries about work, sexual relations, and marriage. He did not employ a control group, and thus could not comment on whether these worries were different in degree or kind from those experienced by nondisabled adolescents.

Hayden et al. (1979) administered the Offer Self-Image Questionnaire, the Tennessee Self Concept Scale, and several projective tests to a group of 20 adolescents with spina bifida and 20 controls matched for age and sex. They found "poorer adjustment" and lower self esteem in the group with spina bifida than in the control group.

Some studies have failed to find differences in self esteem or psychological adjustment between adolescents with spina bifida and those without disabilities. MacBriar (1983)

compared the Piers-Harris Self Esteem Scale scores of 19 young people, ages 8-17, with spina bifida to those of 30 age matched controls. She found no differences in self esteem between the two groups, nor did she find a difference between preadolescent and adolescent children with spina bifida in terms of self esteem.

McAndrew (1979) surveyed 35 adolescents and young people with spina bifida between the ages of 14 and 25, and found that they did not consider boredom, isolation, and depression major factors in their lives.

Pearson, Carr, and Halliwell (1985) predicted that children with spina bifida would have lower self esteem than their nondisabled peers. They used the Piers-Harris Children's Self Concept Scale to compare the self esteem of children with spina bifida, age 12, to that of nondisabled controls. They found no significant difference in self esteem scores for the two groups. Both children with spina bifida, and nondisabled peers, obtained self esteem scores in the average range when compared to the norms for the scale. Pearson, Carr, and Halliwell concluded that 12-year-olds with spina bifida were too immature realize the full impact of their disability. They repeated their study with adolescents ages 14 to 20, and got the same results. They concluded that in the population of adolescents with spina bifida, "just as among able-bodied people, the full range of

contentment, adjustment, or indeed any other attribute is represented" (p.29).

A study of 51 late adolescents and adults between the ages of 17 and 58 with spina bifida (Laurence & Beresford, 1975), noted that they were "an optimistic and amazingly cheerful group of people, leading reasonable lives and earning their livings" (p.126). Few of those surveyed reported loneliness or social isolation.

These studies have focused primarily on determining whether or not adolescents with spina bifida, as a group, differ in self esteem from those without disabilities. The question remains unanswered. However, it seems apparent that adolescents with spina bifida are likely to experience more difficulties in self esteem development than do their nondisabled peers. It is also true that some adolescents with spina bifida will suffer from low self esteem, while others will have a positive self image.

Instead of focusing on the differences between the disabled and nondisabled populations, it may be more clinically useful to focus on differences <u>within</u> the group of children with spina bifida which are associated with high and low self esteem. Several hypotheses have already been advanced concerning the possible relationship of perceived competencies to self esteem, and the possible relationship of

self esteem to age, gender, and perceptions by others. The remainder of this review will deal with other factors which are hypothesized to be related to self esteem within this group.

PERCEPTIONS OF CONTROL

One factor which has been shown to be related to self esteem in children and adolescents with disabilities is the attribution of causes of success and failure.

Attribution of this kind is based on the construct known as "locus of control," or LOC (Rotter, 1966). This concept developed out of social learning theory, and refers to the degree to which a person feels that he or she has control over, and responsibility for, events in his or her life. A person who believes that events in his or her life can be controlled or influenced by his or her actions is expressing a belief in internal control. One who believes that events in his or her life are a result of forces outside his or her control, perhaps determined by luck, fate, or powerful others, is expressing a belief in external control. According to Rotter, the internal-external distinction is not intended to be a dichotomy. Individual scores along the locus of control continuum are assumed to be distributed more or less normally, with some extreme scores marking the ends of the scale.

The psychological literature has generally found a relatively internal locus of control to be more adaptive. Hersch and Schiebe (1967) found that college students and Connecticut Service Volunteers who scored in the internal direction on Rotter's Internal/External scale were less maladjusted, and more active, striving, achieving, powerful, independent, and effective than those who scored in the external direction. Lefcourt et al. (1981) found that locus of control interacted with negative life events to produce lower levels of depression and higher stress tolerance in internal scoring subjects.

The idea that the more in control a person feels, the better his or her psychological adjustment will be, not only makes intuitive sense but is well supported by research.

However, there is some evidence that internal locus of control, and the attendant feelings of responsibility this brings, may not always be adaptive. Sue (1981) theorizes that for minority group members, discrimination and prejudice are more likely to be a factor in negative outcomes. For an individual to feel responsible for an outcome which was affected by discrimination or prejudice would be self blaming and detrimental.

Research supports the idea that a more internal locus of control is not always most adaptive. For example, Toves,

Schill, and Ramanaiah (1981) showed that an internal locus of control was an advantage for males but not for females in terms of dealing with life stress. Mirowsky and Ross (1984) found that although Mexican Americans had a more external locus of control than did Anglo-Americans, their levels of anxiety were lower.

Studies have shown that an individual may make attributions of control differently for failures than for successes. Internal attributions of control over negative events may be less adaptive even for those who do not belong to a minority group. When an individual shows a tendency to attribute successes to his or her own efforts, and failures to situational forces or forces beyond personal control, this is known as the "self serving bias."

Studies of the self serving bias show strong support not only for its existence, but also for its value as a defense mechanism (Arkin et al., 1980, Bradley, 1978, Watkins & Astilla, 1981). It allows an individual to gain a sense of competence or mastery from success, while avoiding the responsibility for failure.

Research supports the hypothesis that, in some instances, attributing failure to causes outside oneself reduces self blame and preserves a sense of self worth. In other words, not just the ratio of success to failure, but also the

individual's attribution of the causes of success and failure, may play a part in determining self esteem.

Harter (in press) used the Children's Perceptions of Control Scale (Connell, in press) in her self esteem studies, and found that children who have the highest self esteem are likely to attribute successes to their own efforts, but to see failure as the result of outside forces. This mechanism, which is useful for nondisabled children, might be especially helpful to those with physical disabilities who may experience a disproportionate amount of failure.

Studies of the relationship of perceptions of control to self esteem in young people with disabilities have also been performed. As noted above, Kellerman, et al. (1980) administered Rosenberg's Self Esteem Scale (Rosenberg, 1979) and a Health Locus of Control scale to 168 adolescents with various chronic illnesses and physical handicaps. Self esteem was positively correlated with perceptions of control, with those young people who felt less in control having lower self esteem. Kellerman et al. did not examine perceptions of control separately for positive and negative events.

Eckart (1986) used Connell's Children's Perceptions of Control Scale (in press), to examine perceptions of internal, powerful others, and unknown control over positive and negative events separately for elementary school age children

with spina bifida. Consistent with the findings of Kellerman et al. (1980), perceptions of control by powerful others and unknown forces showed significant negative correlations with self esteem. This was true for both positive and negative events. There was a negative correlation between self esteem and internal locus of control over negative life events. However, there was no significant correlation between self esteem scores and internal locus of control over positive life events.

In this study, children who saw negative outcomes as not under their control had higher self esteem. This finding is consistent with the social psychological literature on the "self serving bias."

The present study examined the relationship of self esteem to perceptions of internal, powerful others, and external control, over both positive and negative events, in young people with spina bifida. It was expected that the relationship between self esteem and perceptions of control for adolescents with spina bifida would be similar to that found for preadolescents in the previous study (Eckart, 1986).

It was hypothesized that self esteem would show a negative correlation with perceptions of unknown control and control by powerful others. Self esteem was expected to correlate

positively with internal control over positive events (contrary to the previous findings) but negatively with internal control over negative events. These relationships were studied separately for the different age groups as well as for males and females.

PERCEPTIONS OF CONTROL AND AGE

Another factor of interest concerns the relationship of perceptions of control to age. Rosenberg (1979) postulates that as children reach adolescence, they begin to shift from external to internal attributions for many outcomes. Studies of nondisabled adolescents and adults show a tendency for individuals to develop a more internal locus of control as they grow older.

Sherman (1984) studied locus of control in 97 children between the ages of 8 and 13. He performed both cross sectional and longitudinal analysis, and found that internal locus of control increased with age, between cohort groups as well as longitudinally for individuals. Similar trends have been found for adult groups. Knoop (1981) found that internal locus of control increased steadily with age for people between 20 and 65.

The relationship of age to locus of control for adolescents with disabilities has not been studied. The

present study explored the relationship of age to perceptions of control for adolescents, ages 12 through 18, with spina bifida. It was hypothesized that perceptions of internal control would increase with age for this group, as has been demonstrated for nondisabled groups. Again, the data were analysed separately for males and females in order to look at gender differences.

IDENTIFICATION WITH A MINORITY GROUP

Developing a sense of identity is one of the major tasks of adolescence (Erikson, 1959). During the early adolescent years, especially, the young person is trying on new roles and searching for a way to define him or herself in terms of the adult world. Adolescents with spina bifida might be expected to be struggling not only with the usual issues of identity, but also with the problem of defining oneself as a person with a handicap in a predominantly nondisabled world (McArnary, 1985).

Research has shown that for members of a minority group, defining one's identity in terms of that group is related to self esteem issues. Cross (1971) and Thomas (1971) have explored stages of black identity development, while Cass (1979) has explored the development of identity for gay men and lesbian women. Wright (1960) explored self concept

development in persons with disabilities. All of these theories are based on a stage model of minority group identity development which moves from acceptance of majority culture prejudices towards one's own group (with an associated devaluation of the self) through a questioning of these values, to a rejection of the majority prejudices and an acceptance of oneself as a member of this group as well as acceptance of members of different groups.

Cross (1971) proposed a stage model of racial identity for black individuals. According to this model, a black person may progress through four distinct psychological stages in forming a comfortable Black identity. These evolve from a self-perception in which "Blackness" is degraded to a self perception in which he or she is secure with being black, and with Blackness.

In the first stage, which Cross calls "Preencounter," a person's world view is dominated by a "Euro-American" perspective which devalues black people. He or she thinks and acts from this reference point. In the second stage, "Encounter," a personal or social event occurs which challenges the old frame of reference and causes the person to question the "Euro-American" view. In this stage, the individual is receptive to new interpretations of black identity. The "Immersion/ Emmersion" stage follows, in which the person begins to develop a sense of "Black Pride." During

this stage, the individual is likely to be very involved in black political and social activities, and to idealize black culture while denigrating white people and white culture. The final stage in this model is "Internalization," in which the person feels more secure and satisfied with black identity. According to Cross, this stage is characterized by greater "ideological flexibility" and a decline in global condemnation of white people and culture.

Helms and Parham (1985) have used the Cross model to develop the Racial Identity Attitude Scale (RIAS). This scale is designed to provide information on the stage of racial identity which best characterizes an individual. They hypothesize that individuals may hold some attitudes from several stages at once, but they classify a person's racial identity stage according to those attitudes which predominate. Using this system, they have shown racial identity attitude to be related to preference for counselors' race (Parham & Helms, 1981) and to such variables as anxiety and feelings of inferiority (Parham & Helms, 1985).

They have also demonstrated a relationship between self esteem and racial identity (Parham & Helms, 1985b). In this study, Preencounter and Immersion attitudes were associated with low self esteem, while Encounter and Internalization attitudes were associated with high self esteem.

Cass (1979) has developed a six stage model of "identity formation" for gay and lesbian individuals. Her model is similar to the Cross model. She defines stages of identity formation which range from devaluation of one's own group, to a transition in which majority values are questioned, followed by immersion in a gay subculture and "Gay Pride," and finally to an attitude which values one's sexual identity, but accepts it as only one part of the individual's total identity.

Wright, in her 1960 book on the psychology of physical disability, investigated the identity attitudes of persons with physical disabilities. She presented interviews with and autobiographies of those who had grown up with disabilities. This anecdotal evidence describes a series of attitude changes very similar to that in the models described above.

In the first stage, children with physical disabilities accept themselves as they are and do not place much importance on the difference between themselves and others. As the child enters school, he or she is exposed to negative attitudes toward the disability and toward those with disabilities.

Wright states that at this point individuals accept the idea that they should live up to a nondisabled, "normal"

standard, and devalue themselves if they do not. They may try to hide the disability and behave "as if" it did not exist. Individuals at this stage prefer to avoid others with disabilities, and are uncomfortable in being identified with the disabled group. This is similar to what Cross (1971) and Helms and Parham (1985a) describe as the "Preencounter" stage. Wright feels that this stage is necessary before the individual can move on to accept the self and the disability.

Wright does not describe the stages of "Encounter" or "Immersion", but goes on to detail a stage of self acceptance in which the person recognizes the limitations imposed by the disability while placing more emphasis on his or her strengths and abilities. Persons in this stage are more likely to take pride in what they have achieved in spite of the handicap (such as being able to walk, even if with a limp) as well as areas unrelated to the handicap (such as literary talent). They are more likely to feel a bond with others who have physical handicaps, and to join support groups.

Wright theorizes that identification with the physically handicapped as a group is crucial to self acceptance for an individual with a physical handicap. Until a person can accept his or her disability as a part of the self, he or she will continue to hold up standards of nondisablilty as the only acceptable way to be.

Identification with others with disabilities may give a person with a physical handicap a reference group other than the nondisabled. Harter (in press) notes that mentally retarded or learning disabled children who compare themselves with others who have similar educational handicaps tend to view themselves more favorably and have higher self esteem. Eckart (1986) found a positive correlation between self esteem and identification with the physically handicapped in children with spina bifida.

The present study examined identification with the physically handicapped among adolescents with spina bifida, using the Helms and Parham model. It was hypothesized that Preencounter attitudes would have a negative correlation with self esteem in this group, while Internalization attitudes were expected to have a positive correlation with self esteem.

The relationship of age to identification with the physically handicapped was also explored. If these represent stages of development, Preencounter attitudes should decrease with age, and Internalization attitudes should increase with age. These relationships were studied for the group as a whole as well as separately for males and females.

OTHER VARIABLES OF INTEREST

Another factor which might be expected to relate to self esteem in adolescents with spina bifida is the degree of severity of the individual's disability.

Past research on this issue is equivocal. Some studies have shown degree of disability to be an insignificant predictor of adjustment, when compared to social and emotional factors (Hayden et al., 1979; Kolin et al., 1971; McAndrew,1979). Other studies, however, have related mobility (Dorner, 1975; Macbriar, 1983) and continence (Hunt,1981) to adjustment and self esteem in this population. The present study will examine the correlation between self esteem and degree of disability in adolescents with spina bifida. Gender differences will also be examined.

Another variable which might be related to self esteem in adolescents with spina bifida is the type of school they attend.

Blyth, Simmons, and Bush (1978) showed that whether a young person attended an elementary school or a junior high school was related to self esteem, and that the effect was different for boys than for girls. The relationship of these variables to self esteem have not been investigated for children with disabilities. However, several studies of children with disabilities have focused on whether attending a special classroom or special school is related to self

esteem (Dodd, 1984; Carr, Halliwell, & Pearson, 1984). The present study examined all three of these variables. The relationship of self esteem to school type (elementary, junior high, or high school), special versus mainstreamed classroom, and gender, was explored.

SUMMARY OF RESEARCH HYPOTHESES

The present study examined the correlates of self esteem in young people with spina bifida, between the ages of 12 and 18. Self esteem was measured by both self report and behavioral rating. Early adolescent (12-14) and late adolescent (15-18) groups were assessed separately, as were young men and women. Comparisons were made to an earlier study of preadolescents (8-12) with spina bifida (Eckart, 1986). The following hypotheses were explored:

1) Self esteem will correlate positively with self perceived social, physical, and cognitive competence, as well as perceived adequacy in appearance and behavior. The relative magnitude of correlations in each of these areas was of interest. Perceived physical competence was expected to show the lowest correlation with self esteem.

2) Teacher ratings of competence in social, physical, and cognitive skills will correlate with self esteem, but not as highly as self rated competence will.

3) There will be no significant difference between self and teacher ratings of social and cognitive competence, but adolescents will rate their physical skills significantly higher than do their teachers.

4) Early adolescents (age 12-14) will have lower average self esteem scores than will late adolescents (age 15-18). This pattern was expected to differ for males and females.

5) Self esteem will correlate positively with perception of internal control over positive outcomes, and negatively with perception of internal control over negative outcomes. Perception of control by powerful others and unknown forces, over both positive and negative events, will correlate negatively with self esteem.

6) Perceptions of internal control will increase with age.

7) Self esteem will have a negative correlation with Preencounter attitudes of identification with the physically disabled, and a positive correlation with Internalization attitudes of identification with the physically disabled.

8) Preencounter attitudes will decrease with age, and Internalization attitudes will increase with age.

The following relationships were also explored:

9) The relationship between self esteem and degree of disability.

10) The relationships among self esteem and type of school (K-8, Junior High School or Senior High School), special or regular classroom, and gender.

METHODS

SUBJECTS

Adolescents with spina bifida, between the ages of 12 and 18, were recruited for the study. Subjects were contacted in several different ways and through many organizations. A total of 436 questionnaire packets were distributed, beginning in April of 1987 and continuing through July. One hundred and fifteen of these were mailed directly to the subjects by the researcher. Names and addresses were provided by the Spina Bifida Association in Cincinnati, and the Shriner's Crippled Children's Hospital in Lexington, Kentucky. The remaining 270 questionnaire packets were mailed to various clinics and organizations which agreed to help with the study, but did not wish to provide a mailing list. These organizations agreed to distribute the questionnaires themselves. The Spina Bifida Association chapters in Akron, Cleveland, Canton, Northwest Ohio, Louisville, and Indianapolis agreed to mail the packets to families in their organizations who had a child in this age range with spina bifida. The Crippled Children's Services of Kentucky, the Cleveland Clinic, and the Shriner's Crippled Children's Hospital in Lexington all agreed to distribute the questionnaire packets to their patients during Myelomeningocele Clinic hours. In addition, questionnaire packets were distributed to families with adolescent children at the National Conference of the Spina Bifida Association in Denver, Colorado in July of 1987.

Of the 436 questionnaire packets distributed by the researcher, it is not known how many actually reached the subject population. Some clinics and Spina Bifida Association chapters may have requested more packets than they actually distributed. For this reason, the actual return rate of the questionnaires is unknown. For questionnaires mailed directly by the researcher, the return rate was 35/115, or 30%.

PROCEDURE

Questionnaire packets were mailed to the parents of the adolescent subjects or handed to them at a clinic. Packets included a letter to the parents introducing the researcher and explaining the study, a consent form for both parent and subject to sign, a letter to the adolescent subject, 3 questionnaires for the adolescents and one for the parents, directions for the questionnaires, a consent form authorizing the researcher to contact the child's teacher to fill out a questionnaire, and a card to be completed by the subject with his or her name and address in order to receive a gift for participating. The questionnaires for the subject were in the form of a small booklet. Several institutions, such as the Shriner's Hospital and the Cleveland Clinic, included a cover letter explaining that the institution supported the study and encouraged families to participate. (See Appendix

A for sample letters and questionnaires.)

Parents were asked to look over the questionnaires and to assist the subjects with the directions. However, they were asked not to assist in any way with the questionnaire responses. They were asked to return the questionnaires, permission forms, and address card in a stamped, self addressed envelope provided by the researcher.

Questionnaires were identified by number only. This number provided information as to the source of subject contact (ie, Spina Bifida Association, Cleveland Clinic, etc.). Materials which identified the subjects by name, such as permission forms and gift cards, were separated from the questionnaires as soon as they were received. In this way, the confidentiality of individual subjects was maintained.

A follow-up letter was mailed within three weeks to subjects for whom the researcher had names and addresses, reminding them to return the questionnaire if they had not done so. Several weeks after this, an additional follow-up letter was mailed. This letter reminded parents that it was not too late to reply if they wished to do so, and asked parents who did not plan to participate to use a brief checklist to indicate their reasons. These 2 follow-up letters were also mailed by the Spina Bifida Association chapters to the families they had contacted. Subjects

contacted through a clinic or the National Conference of the Spina Bifida Association received no follow-up letters.

After a questionnaire was returned, the subject's teacher was contacted. A letter personally addressed to the teacher, a questionnaire, and the permission form signed by the subject and parents were included, as well as a postage-paid envelope. Teachers received two follow-up letters after the initial contact. (See Appendix A for sample letters and questionnaires.) The questionnaires were marked with the subject's number and no further identifying information. Thirty-eight teachers returned the questionnaires.

Information concerning the degree of the child's disability was obtained from the medical records of adolescents served by the Shriner's Hospital. This information was not available for subjects recruited through other organizations. Degree of disability ratings were available for only 13 subjects.

All subjects received a gift in exchange for their participation. They were offered a choice of either a solar pocket calculator or $5 cash. These gifts were provided through a grant from the Frakes Foundation of the University of Cincinnati. When all of the data had been collected and analyzed, participants (including subjects, parents, and teachers) were mailed a letter briefly explaining the results

(see Appendix A).

MEASURES

Subjects were asked to complete the Perceived Competence Scale for Children (Harter, 1979a), the Children's Perceptions of Control Scale (Connell, in press), and the Physical Disability Identification Scale (adapted from Helms & Parham, 1985). Their parents were asked to fill out a Behavior Rating Checklist (Savin-Williams & Demo, 1983). Their teachers were asked to complete the Teacher Rating Scale of Child's Actual Competence (Harter, 1979b).

Self Esteem:

The Perceived Competence Scale for Children (Harter 1979a), "self worth" subscale, was used as the measure global self esteem. This scale was standardized on a sample of 2400 children in grades 3 through 9. Internal consistency (coefficient alpha) for this scale is reported as .73, with a test-retest reliability at 3 months of .70. (Harter, 1982). A previous study of children with spina bifida showed an internal reliability of .70 (Eckart, 1986).

The Behavior Rating Checklist (Savin-Williams & Demo, 1983)

was used as a behavioral measure of the child's self esteem. It was completed by the child's parents. This scale was developed in a study of 40 boys, ages 12-18, with a mean age of 15.5 years. Inter-rater reliability for the 20 items ranged from .59 to .94., with a mean of .70. Adult and peer ratings of subjects in the validation study had a correlation of .85. (Savin-Williams and Demo, 1983).

Perceived Competence:

The Perceived Competence Scale for Children (Harter 1979a), social, cognitive, physical, appearance, and behavior subscales were used as the measures of self perceived competence. The scale was standardized on a sample of 2400 children in grades 3 through 9. The 5 factors have been demonstrated to be separate and distinct, and distinct as well from the self esteem subscale ("self worth") (Harter, 1982). Internal consistency (coefficient alpha) for the 5 subscales has been shown to be .80, .80, .84, .81, and .75, respectively. Test-retest reliabilities at 3 months were .78, .80, and .87 for the social, cognitive, and physical subscales (Harter, 1982). A study in which this scale was completed by 30 children with spina bifida showed subscale reliabilities (coefficient alpha) of .70, .80, .70, .75 and .25 (Eckart, 1986).

The Teacher Rating Scale of Child's Actual Competence.

(Harter, 1979b) was used as a measure of teacher rated competence. This scale parallels the Perceived Competence Scale for Children. It has 4 subscales on which teachers rate a child's physical, social, and cognitive competence, as well as the child's global sense of "self worth." Subscale reliabilities (coefficient alpha) range from .91 to .94. For a sample of teachers of 30 children with spina bifida, subscale reliabilities were .64, .95, .93, and .83 respectively (Eckart, 1986).

Perceptions of Control:

The Children's Perceptions of Control scale (Connell, in press), was used as a measure of perceptions of control. The scale has 6 subscales which measure perceptions of internal, powerful others', and unknown control separately for positive and negative outcomes. This scale was standardized on a sample which included nearly 1300 children in grades 3 through 9. Internal reliabilities (coefficient alpha) for the subscales are reported to range from .45 to .75, with a mean reliability of .62 for the 6 subscales. Retest reliabilities for the normative sample at 17 month follow up ranged from .25 to .50 with a mean of .32. (Connell, in press). A study in which this scale was completed by 30 children with spina bifida showed internal reliabilities for subscales measuring perceptions of internal control over positive and negative events, powerful others' control over

positive and negative events, and unknown control over positive and negative events to be .46, .74, .61, .53, .77, and .50, respectively.

Identification with the Physically Handicapped:

The Physical Disability Identification Scale (adapted from Helms and Parham, 1985) was used as a measure of identification with the physically handicapped. The original scale was designed to measure the development of Black identity, based on a four stage model (Cross, 1978). The scale was developed using a sample of over 300 black college students. Reliability values (coefficient alpha) for the Preencounter, Encounter, Immersion/Emmersion and Internalization subscales are reported as .67, .72, .66, and .71. (Helms and Parham, 1985).

In this study, the scale was modified to inquire about attitudes of identification with the physically handicapped instead of a racial group. A modification based on the original scale items upheld a hypothesis, but yielded internal reliabilities (coefficient alpha) of .56, .42, .47, and .38 for the Preencounter, Encounter, Immersion/ Emmersion and Internalization subscales. Because these reliabilities are rather modest, a factor analysis was performed and the items were grouped according to their factor loadings. This yielded high internal reliabilities, but poor face validity.

The scale that resulted did not satisfy any hypothesis. It was decided to utilize the original version of the scale, because it was based on the Cross model and seemed to have some concurrent validity in the upholding of a hypothesis.

Degree of Disability:

Degree of disability was rated according to the functional motor level of the child's myelomeningocele lesion. This information was obtained from the clinic records of 13 subjects recruited through the Shriner's Hospital. Functional motor level of lesion is directly related to ambulation ability as well as continence (Hoppenfeld, 1977), with higher lesions being associated with greater disability. It has been used as a measure of disability in many studies of those with spina bifida (eg., Dodd, 1984; Shaffer et al., 1985; Shurtleff et al., 1975).

STATISTICAL ANALYSIS:

The research hypotheses were tested in the following way:

Hypothesis 1:

It was predicted that self esteem would correlate positively with self perceived social, physical, and cognitive competence, as well as perceived adequacy in

appearance and behavior. The relative magnitude of correlations in each of these areas was of interest.

Pearson product-moment correlation coefficients were computed between the measure of self esteem (total score on the "self worth" subscale of the Perceived Competence Scale for Children) and the measures of perceived competence in social, physical, and cognitive competence, and appearance and behavior. Correlations were also computed between each of these measures and the observer measure of self esteem, the Behavior Rating Checklist. This analysis was performed for the sample as a whole, as well as separately for males and females, and separately for the age groups 12-14 and 15-22.

Hypothesis 2:

It was predicted that teacher ratings of competence in social, physical, and cognitive skills would correlate with self esteem , but not as highly as self rated competence would.

Pearson product-moment correlation coefficients were computed between teacher ratings of cognitive, social, and physical competence (using the Teacher Rating Scale) and the measure of self esteem (total score on the "self worth" subscale of the Perceived Competence Scale for Children).

This was done for the group as a whole, as well as separately for children in special and regular classrooms. As above, all analyses were performed for the sample as a whole, as well as separately for males and females of all ages, and separately for the age groups 12-14 and 15-22.

Hypothesis 3:

It was predicted that there would be no significant difference between self and teacher ratings of social and cognitive competence, but that adolescents with spina bifida would rate their physical skills significantly higher than would their teachers.

Paired t-tests were performed between each child's score on the cognitive, social, physical, and "self worth" subscales of the Perceived Competence Scale for Children and his or her teacher's rating of these competencies on the Teacher Rating Scale.

Hypothesis 4:

It was predicted that early adolescents (age 12-14) would have lower average self esteem scores than would late adolescents (age 15-22). It was hypothesized that this pattern would differ for males and females.

A 2x2 (age group x gender) ANOVA was performed with self-

reported self esteem ("self worth" score) as the dependent variable. T-tests were performed between the "self worth" scores of boys and girls in the 12-14 and 15-22 age groups. The mean "self worth" scores of boys and girls at each age, as well as the correlation between age and "self worth" score for boys and girls, were examined.

Hypothesis 5:

It was hypothesized that self esteem would correlate positively with perception of internal control over positive outcomes, and negatively with perception of internal control over negative outcomes. Perception of control by powerful others and unknown forces, over both positive and negative events, was predicted to correlate negatively with self esteem.

Pearson product-moment correlation coefficients were computed between the two measures of self esteem ("self worth" score from the Perceived Competence Scale for Children and total score on the Behavior Rating Checklist) and each of the subscales of the Children's Perceptions of Control Scale. This was done for the whole sample, for girls and boys separately, and for the two age groups (12-14 and 15-22) separately.

Hypothesis 6:

It was hypothesized that perceptions of internal control would increase with age.

Pearson product-moment correlation coefficients were computed between each of the subscales of the Children's Perceptions of Control Scale and age. This was done for the group as a whole as well as separately for males and females.

Hypothesis 7:

It was hypothesized that self esteem would have a negative correlation with Preencounter attitudes of identification with the physically disabled, and a positive correlation with Internalization attitudes of identification with the physically disabled.

Pearson product-moment correlation coefficients were computed between the two measures of self esteem ("self worth" score from the Perceived Competence Scale for Children and total score on the Behavior Rating Checklist) and each of the subscales of the Physical Disability Identification Scale. This analysis was performed for the sample as a whole, as well as separately for males and females, and separately for the age groups 12-14 and 15-22.

Hypothesis 8:

It was hypothesized that Preencounter attitudes would decrease with age, and Internalization attitudes would increase with age.

Pearson product-moment correlation coefficients were computed between each of the subscales of the Physical Disability Identification Scale and age. This was done for the group as a whole as well as separately for males and females.

The following relationships were also explored:

1) The relationship between self esteem and degree of disability.

Pearson product-moment correlation coefficients were computed between the two measures of self esteem and the rating of disability.

2) The relationships among self esteem and type of school (K-8 vs. junior high school vs. senior high school), special or regular classroom, and gender.

A 2x2x3 ANOVA (gender, classroom, and school type) was performed with "self worth" score from the Perceived Competence Scale for Children as the dependent variable. The

analysis was also performed with total score on the Behavior Rating Checklist as a dependent variable.

A one-way analysis of variance was performed between the mean "self worth" scores of the adolescents recruited through the Spina Bifida Association, the Shriner's Hospital, the Cleveland Clinic, and the Crippled Children's Clinic of Lexington, KY. This was done to see if subjects recruited in various ways differed on this central variable.

Due to the large number of comparisons performed, correction terms (Sheffe's) were performed on t-tests which were not pre-planned and orthogonal. Because these are not appropriate for correlations, the significance level for correlations was set at .01 instead of .05. Correlations whose significance levels were between .05 and .01 are reported, and it is noted that they "approached significance."

RESULTS

SUBJECTS

Fifty-four young people with spina bifida participated in the study, including 33 girls and 21 boys. They ranged in age from 12 to 22, with a mean age of 15.3 and a modal age of 16. Twenty one are classified as "early adolescents," ages 12-14, while 28 are considered "late adolescents," age 15 and up. The ratio of girls to boys is 13:8 (1.6:1) in the early adolescent group, and 20:13 (1.5:1) in the late adolescent group. Although more girls than boys participated in the study, the ratio of girls to boys is similar in the two groups.

The majority of the subjects lived in Ohio, Kentucky, and Indiana. However, because of cooperation from the National Conference of the Spina Bifida Association, young people from as far away as Florida and Colorado participated. There was a mixture of urban and rural young people, as well as a range of socioeconomic groups. These factors were not included in the analysis. However, a one-way analysis of variance (ANOVA) was performed in order to determine whether there was any significant difference in self esteem scores between subjects recruited through the Spina Bifida Association, the Shriner's Hospital, the Cleveland Clinic, or the Crippled Children's Clinics. This analysis showed no significant difference between subjects recruited from different sources.

A total of 60 young people with spina bifida initially responded to the questionnaires. Six of these responses were not used because it appeared that the subject had not understood the directions for the first questionnaire, which requires the subject to make two choices and come up with one answer (see Appendix A for the Perceived Competence Scale for Children). Subjects who responded with two answers for each question on the Perceived Competence Scale for Children were not included in the analysis.

Although over 400 questionnaires were mailed, only 60 were returned. As stated in the methods section, the return rate for questionnaires mailed directly to the subject by the researcher was 30%. The other 321 questionnaires were mailed by the Spina Bifida Association or distributed at a clinic. The actual return rate for these questionnaires is unknown.

Fifty parents who did not return the questionnaires were mailed a final follow-up letter. This letter stated that it was not too late to participate; however, if they did not wish to participate, they were asked to indicate why not. (See Appendix A for follow-up letters). Twenty-six parents responded by returning this checklist. The majority (13) indicated that they would have liked to participate, but "did not have time" to do so. Some of these requested another copy of the questionnaires. Other reasons given for failure to participate were that the adolescent was unable (4

subjects) or unwilling (8 subjects) to fill out the questionnaires. One parent requested a large-print version of the questionnaires, but did not return it. One parent stated that her son had died. None of the parents stated that he or she had objected to the study or had not wanted to participate.

Given the length of the questionnaires, and the time involved to complete them, it seems reasonable to assume that those subjects who did participate were highly motivated and tried to provide reasonably accurate data.

HYPOTHESIS 1

It was hypothesized that self esteem would correlate positively with self perceived social, physical, and cognitive competence, as well as perceived adequacy in appearance and behavior. This hypothesis was supported. For the group as a whole, self esteem (as measured by self-report) correlated positively with perceived cognitive competence ($r=.49$, $p<.001$), social competence ($r=.50$, $p<.001$) physical competence ($r=.29$, $p<.01$), behavioral competence ($r=.45$, $p<.001$), and adequacy in appearance ($r=.56$, $p<.001$). The relative magnitude of correlations in each of these areas was of interest. Perceived physical competence had the lowest correlation with self esteem for the group as a whole.

A comparison of boys and girls showed that they differed in two areas of perceived competence: physical and behavioral. Girls who felt that they behaved as they should, and were kind to others, were more likely to have high self esteem ($r=.58$, $p<.001$). This was not true for boys ($r=.15$, $p>.05$). In contrast, the relationship between physical competence and self esteem approached significance for boys ($r=.42$, $p<.03$), and not for girls ($r=.24$, $p>.05$). The low correlation between perceived physical competence and self esteem in the total group may be due to the fact that the relationship was not significant for girls, and more girls than boys were included in the study. These results are summarized in Table 1.

A comparison of the early adolescent group (ages 12-14) to the late adolescent group (ages 15-22) showed that both groups had the same general pattern of correlations as did the group as a whole. For the early adolescents, physical competence did not correlate significantly with self esteem ($r=.27$, $p>.05$). The relationship approached significance in the late adolescent group ($r=.32$, $p<.03$). This may again relate to the high proportion of girls in the sample.

Table 1: Correlations between perceived competence and self-reported self esteem.

	All S's n=54	Boys : Girls n=21 : n=33	12-14 : 15-22 n=21 : n=33
Perceived Competence		:	:
Cognitive	.49***	.56** : .45**	.63***: .38*
Social	.50***	.45* : .54***	.60** : .41*
Physical	.29*	.42+ : .24	.27 : .32+
Behavioral	.45***	.15 : .58***	.47* : .41*
Appearance	.56***	.69***: .51***	.62***: .56**

(+p<.05, *p<.01, **p<.005, ***p<.001)

Hypothesis 1 was also tested with a behavioral rating of self esteem. Fifty one parents completed this part of the study. Parent ratings of a child's self-confident behavior (observed self esteem) correlated positively with the child's self perceived competence in cognitive (r=.40, p<.002), social (r=.29, p<.01), and behavioral skills (r=.34, p<.01). Adolescents who saw themselves as competent in these areas were most likely to be rated by their parents as showing self confident behaviors which indicate self esteem. Parent ratings did not correlate with the adolescents' ratings of physical competence (r=.12, p>.05) or appearance (r=.20, p>.05). These results are summarized in Table 2.

The correlations between parent ratings of self esteem and the child's self perceived competence showed very different patterns for boys than for girls. Boys who felt cognitively competent were most likely to be rated by their parents as showing self confident behaviors ($r=.63$, $p<.002$). The correlation between observed self esteem and self perceived social competence ($r=.35$, $p<.05$) and appearance ($r=.36$, $p<.05$) approached significance for boys. Girls who felt their behavior was appropriate were most likely to be rated by their parents as showing high self esteem ($r=.58$, $p<.002$).

For early adolescents, the correlations between observed self esteem and perceived social competence ($r=.38$, $p<.05$), perceived competence in behavior ($r=.36$, $p<.05$) and appearance ($r=.37$, $p<.05$) approached significance. For late adolescents, it was perceived cognitive competence which correlated with observed self esteem ($r=.51$, $p<.005$). The relationship between perceived behavioral competence and observed self esteem approached significance ($r=.31$, $p<.05$).

Table 2: Correlations between perceived competence and observed self esteem.

	All S's n=51	Boys : Girls n=19 : n=32	12-14 : 15-22 n=20 : n=31
Perceived Competence		:	:
Cognitive	.40**	.63** : .26	.30 : .51**
Social	.29*	.35+ : .24	.38+ : .18
Physical	.12	.10 : .25	.30 : .05
Behavioral	.34*	.10 : .44**	.36+ : .31+
Appearance	.20	.36+ : .11	.37+ : .10

(+p<.05, *p<.01, **p<.005, ***p<.001)

In general, adolescents who felt more competent in different skills were rated as behaving more confidently by their parents. Parents did see some differences between boys and girls, and between older and younger children, in how feelings of competence were reflected in behavior.

HYPOTHESIS 2

It was predicted that teacher ratings of competence in social, physical, and cognitive skills would correlate with self esteem, but not as highly as would self rated competence. The data partially supported this hypothesis.

Correlations between self reported self esteem and teacher ratings of competence in specific skills were moderate and failed to achieve significance. The correlation between teacher ratings of cognitive competence and self esteem approached significance ($r=.26$, $p<.05$). The correlations between teacher ratings of social ($r=.24$, $p<.07$) and physical ($r=.22$, $p<.09$) competence were similar, but did not approach significance.

In contrast, correlations between observed self esteem and teacher rated competence in cognitive ($r=.34$, $p<.01$) and social skills ($r=.35$, $p<.01$) did achieve significance. Teacher ratings of physical competence did not correlate with observed self esteem ($r=.01$, $p>.05$).

Adolescents who report feeling competent in cognitive, social, and physical skills also report feeling better about themselves in general. Their own ratings of their skills have a stronger relationship with self esteem than does their teachers' ratings of their skills. However, their parents' rating of their self confident behavior did correlate with their teachers' ratings of their cognitive and social skills.

p>.05). Those in regular class placement saw themselves as significantly less cognitively competent than did their teachers (t=5.17, p<.001).

Table 3: Comparison of teacher and self ratings of competence. (n=38)

Perceived competence rating :	$\bar{X}$	SD	t
Cognitive :			
teacher :	2.80	.85	5.40***
self :	2.29	.81	
Social :			
teacher :	2.66	.92	.78
self :	2.70	.81	
Physical :			
teacher :	1.57	.73	-2.84*
self :	1.99	.75	

(+ p<.05, *p<.01, **p<.005, ***p<.001)

Group t-tests (as distinct from the paired t-tests reported above) showed that there was no significant

difference between the mean perceived competence scores of adolescents in special and regular class placement for social ($t=.29$, $p>.05$), physical ($t= -.13$ $p>.05$) or cognitive ($t=1.42$, $p>.05$) competence. Adolescents saw their skills in these 3 areas as comparable regardless of their school placement.

There was a difference, however, in the teacher ratings of the cognitive competence of the two groups. Teachers rated special and regular class students similarly in social ($t= -.75$, $p>.05$) and physical ($t=.81$, $p>.05$) competence. Teachers of adolescents in regular class placements rated their students as more cognitively competent than did teachers of special classrooms ($t= -2.67$, $p<.01$). The adolescents in regular class placement are seen by their teachers as more cognitively competent than those in special classrooms, while they see themselves as having the same level of cognitive competence.

It is also interesting to compare these results to the results of a study of preadolescents, ages 8-12, with spina bifida (Eckart, 1986). Children in this study rated themselves as more physically competent than did their teachers. The effect in this first study was stronger ($t= -5.12$, $p<.001$) than in the present study. Preadolescents in the first study rated their physical skills more highly ($\bar{X}=2.25$) than did adolescents in the present study ($\bar{X}=1.57$).

Although this difference is not statistically significant, when the data from both studies are analysed together a small negative correlation between age and perceived physical competence is present ($r = -.19$, $p < .04$). There may be a slight trend for adolescents with spina bifida to see themselves as less physically competent as they get older.

HYPOTHESIS 4:

It was predicted that early adolescents (age 12-14) would have lower average self esteem scores than would late adolescents (age 15-22), and that the pattern would differ for males and females. The first part of this hypothesis was not supported by the data. However, there were differences in the pattern of self esteem scores for boys and girls, and an interactive effect was found between age and gender.

A 2x2 (age group x gender) ANOVA was performed with self-reported self esteem as the dependent variable. There were no significant main effects for either gender or age group. However, a significant two way interaction was present. These results are summarized in Table 4.

Table 4: Analysis of variance examining the effects of gender and age group on self-reported self esteem.

Source of Variation	SS	df	MS	F	P
Main effects	0.62	2	.31	0.66	-
Age group	0.56	1	.56	1.2	-
Gender	0.06	1	.06	0.13	-
Interaction					
Age x Gender	2.20	1	2.20	4.64	.03
Explained	2.82	3	0.94	1.98	-
Residual	23.20	49	0.47		
Total	26.02	52	0.50		

The mean self esteem scores of boys and girls in the early and late adolescent groups were examined separately, in order to find out more about this interaction. These means are displayed in Table 5. It can be seen that the mean self esteem score for early adolescent boys is higher than that for girls, while the opposite is true in the late adolescent group. Comparisons and contrasts (t-tests) did not confirm any significant differences between these cells. This may have been affected by the small size of some cells. Pearson product-moment correlation coefficients showed a positive correlation between age and self esteem score for girls

(r=.33, p<.03) and a negative correlation for boys (r=-.33, p<.07). Although these relationships are not considered statistically significant, it can be noted that there is an upward trend in self esteem scores for girls with age, and a downward trend for boys. This was true only for self-esteem as measured by self-report; there were no effects of age and gender on observed self esteem.

Table 5: Mean self esteem scores (self-report) by age group and gender.

	AGE	12-14	15-22
GENDER			
	Males	3.0 (n=8)	2.7 (n=13)
	Females	2.5 (n=13)	3.1 (n=20)

Comparisons of the present sample of adolescents with spina bifida to a previous sample of 30 preadolescents with spina bifida (Eckart, 1986) showed that the trend in self esteem scores for boys and girls is consistent in the two studies. In the preadolescent group (ages 8-12), the mean self esteem scores for the gender groups were 2.4 for girls and 2.9 for boys. These scores are very similar to the mean

self esteem scores for tihe 12-14 group in the present study (2.5 and 3.0, respectivelly). In the preadolescent group, the difference was statisticeally significant (t=2.56, p<.01), with boys showing higher self esteem scores.

HYPOTHESIS 5

It was hypothesized thhat self esteem would correlate positively with percepticon of internal control over positive outcomes, and negatively with perception of internal control over negative outcomes. Perception of control by powerful others and unknown forcems, over both positive and negative events, was predicted to correlate negatively with self esteem. This hypothesis was partially supported by the data. All relationships were im the expected direction, but some did not achieve significamnce.

In general, the data suggests that adolescents with spina bifida who feel that they can control positive outcomes feel better about themselves. This relationship is stronger for boys than for girls, and stronger for early adolescents than for late adolescents. Adolescents who feel that negative outcomes are under their control tend to have lower self esteem, and this relationship is stronger in the younger age group. Those who feel that powerful others and unknown forces control events in their lives tended to have lower self esteem, and this was true for the early adolescents much

more than the late adolescents.

For the sample as a whole, self-reported self esteem correlated positively with perceptions of internal control over positive outcomes ($r=.20$, $p<.07$) and negatively with perceptions of internal control over negative outcomes ($r= -.35$, $p<.005$), as predicted. Only the latter relationship is significant. Self esteem correlated negatively with perceptions of control by unknown forces ($r= -.35$, $p<.005$), but the relationship was significant for positive outcomes alone ($r= -.41$, $p<.001$) and not for negative outcomes alone ($r= -.12$, $p>.05$). The negative correlation between self esteem and perceptions of control by powerful others approached significance ($r= -.22$, $p<.05$), but was not significant for either positive events alone ($r= -.18$, $p>.05$) or negative events alone ($r= -.20$, $p>.05$). These results are summarized in Table 6.

When early adolescents are studied separately from late adolescents, it can be seen that for the early adolescent group, all relationships are significant or approach significance in the predicted direction. This is not true for late adolescents, who only show one significant relationship. (Please see Table 6 for correlations and significance levels.) It appears that the relationship between perceptions of control and self esteem is weaker in the 15-22 year old group, and this no doubt contributes to

the failure to find the predicted results in the population as a whole.

Table 6: Correlations between self-reported self esteem and perceptions of control over positive and negative outcomes.

	All S's n=54	Boys : Girls n=21 : n=33	12-14 : 15-22 n=21 : n=33
Perception of control		:	:
Internal		:	:
positive	.20	.49* : .02	.45* : .12
negative	-.35**	-.33 :-.36+	-.56* :-.21
Powerful other		:	:
positive	-.18	-.12 :-.22	-.47* :-.07
negative	-.20	-.45+ :-.06	-.32+ :-.12
Unknown		:	:
positive	-.41***	-.23 :-.52***	-.55** :-.30+
negative	-.12	-.24 :-.04	-.37+ :-.08

(+p<.05, *p<.01, **p<.005, ***p<.001)

When boys and girls are studied separately, it can be noted that the pattern of relationships for girls is similar to that in the sample as a whole, although some of the relationships are weak and fail to show significance. Boys show a greater positive correlation between perceptions of internal control over positive outcomes and self esteem

(r=.49, p<.01) and a greater negative correlation between self esteem and perceptions of control by powerful others over negative events (r=.45, p<.02) than do girls. The latter result approaches but does not achieve significance.

Observed self esteem was also correlated with perceptions of control. For the group as a whole, there was no correlation between perceptions of internal control and self esteem, either for positive (r=.11, p>.05) or negative (r= -.03, p>.05) outcomes. Perceptions of control by powerful others was negatively correlated with observed self esteem, for both positive (r= -.37, p<.005) and negative (r= -.24, p<.04) outcomes. The latter correlation approaches significance. Perceptions of control by unknown forces was also negatively correlated with observed self esteem for positive (r= -.22, p<.05) and negative (r= -.33, p<.01) outcomes. The former relationship approaches significance.

When girls and boys are studied separately, it can be seen that in general the relationship of perceptions of control to observed self esteem is stronger for boys than for girls. This is especially true of perceptions of internal control over positive outcomes (r=.44, p<.03) and perceptions of control by powerful others over negative events (r= -.60, p<.005). These results are similar to those obtained using the self-report measure. There are few differences between the early and late adolescent groups in terms of the

Table 7: Correlations between observed self esteem and perceptions of control.

	All S's n=51	Boys n=19	Girls n=32	12-14 n=20	15-22 n=31
Perception of control					
Internal					
positive	.11	.44+	-.18	.13	.06
negative	-.03	.10	-.11	-.12	.02
Powerful other					
positive	-.37**	-.51*	-.32+	-.40+	-.34+
negative	-.24+	-.60**	-.08	-.32	-.20
Unknown					
positive	-.22+	-.18	-.26	-.13	-.27
negative	-.33*	-.43+	-.32+	-.40+	-.27

(+p<.05, *p<.01, **p<.005, ***p<.001)

correlation between observed self esteem and perceptions of control. These results are summarized in Table 7. In general, it can be seen that adolescents with spina bifida who feel that powerful others and unknown forces can control events in their lives were less likely to be rated as self-confident by their parents.

HYPOTHESIS 6

It was hypothesized that perceptions of internal control would increase with age. This hypothesis was not supported by the data. In fact, an opposite effect was found.

For the group as a whole, there was a negative correlation between internal perceptions of control over positive outcomes and age ($r = -.35$, $p < .005$). There was no relationship between internal perceptions of control over negative outcomes and age ($r = .02$, $p < .05$). This was true for both boys and girls. This data suggests that older adolescents, both girls and boys, with spina bifida are less likely to feel that they can cause positive things to happen in their lives than are younger adolescents.

Girls showed a positive correlation between age and perceptions of control by powerful others for negative outcomes ($r = .33$, $p < .03$). This approached significance, and suggested that older girls were more likely to believe that powerful others could cause negative events to happen in their lives.

HYPOTHESIS 7

It was hypothesized that self esteem would have a negative correlation with Preencounter attitudes of identification with the physically disabled, and a positive correlation with Internalization attitudes of identification with the

physically disabled. This hypothesis was partially supported by the data.

The negative correlation between Preencounter attitudes and self esteem approached significance ($r = -.27$, $p < .02$). This relationship was stronger for late adolescents ($r = -.33$, $p < .03$) than for early adolescents ($r = -.16$, $p > .05$), and stronger for boys ($r = -.49$, $p < .01$) than for girls ($r = -.13$ $p > .05$). However, there was no correlation between self esteem and Internalization attitudes ($r = .02$, $p > .05$), for the group as a whole or for the gender and age groups separately. Observed self esteem also showed no relationship to Preencounter or Internalization attitudes for any group.

HYPOTHESIS 8

It was hypothesized that Preencounter attitudes of identification with the physically handicapped would decrease with age, and Internalization attitudes would increase with age. This hypothesis was not supported by the data. There was no relationship between age and Preencounter ($r = .00$, $p > .05$) or Internalization ($r = -.04$, $p > .05$) attitudes of identification with the physically disabled. This was true for both boys and girls. However, when the two age groups were studied separately, a <u>positive</u> correlation between age and Preencounter attitudes was noted in the early adolescent group ($r = .35$, $p < .05$). This relationship approached

significance. No such relationship was found in the late adolescent group. This suggests that adolescents with spina bifida are forming more negative attitudes about individuals with physical handicaps during the years between age 12 and 14.

OTHER RELATIONSHIPS OF INTEREST

1) The relationship between self esteem and degree of disability.

There was no significant relationship between self esteem and degree of disability for any group.

2) The relationships among self esteem and type of school (K-8 vs. junior high school vs. senior high school), special or regular classroom, and gender.

A 2x2x3 ANOVA (gender, classroom, and school type) showed no significant main effects or interactions.

DISCUSSION

The results of this study support many of the predictions made in the introduction. Several hypotheses based on an earlier study of preadolescents with spina bifida were supported. The study provided a cross-sectional view of self esteem and its correlates over the adolescent years for young people, ages 12-22, with spina bifida. Some of the most interesting findings concern gender differences in this age group. Before these findings can be discussed, however, some methodological problems should be addressed.

METHODOLOGICAL CONCERNS

The question of sampling error cannot be ignored. Although over 400 questionnaire packets were mailed, only 60 were returned. However, of the packets mailed by the researcher directly to the parents, 30% were returned. This figure may be closer to the actual return rate, since it is probable that clinics and Spina Bifida chapters requested more packets than they actually distributed. The question of how the 30% who responded differed from the 70% who refused remains unanswered. The sample was self-selected, and there is no way to know whether it is representative.

The brief questionnaire mailed to parents who did not participate was designed in part to address these questions. About half of the parents returned this questionnaire. Most stated that they did not have time to participate. This may

have been a euphemism for lack of interest, but it is also true that the questionnaires were quite lengthy. Other parents stated that their child either could not or would not complete the questionnaires. As to the first reason, the increased incidence of mild mental retardation and learning disabilities among individuals with spina bifida must surely have been a factor in the low return rate. This problem was avoided in the 1986 study by selecting only children with recent WISC-R full-scale IQ scores of 80 or above, and by reading the questionnaires to the subjects. The design of the present study precluded such a solution, but it is reasonable to assume that individuals who could not read and understand the questionnaires were self-selected out of the sample. Other children with spina bifida have difficulties with fine motor coordination which would have made the questionnaires difficult to complete, and they also must have self-selected out.

In regards to the second reason, it is not surprising that many teenagers did not wish to spend an hour or more filling out questionnaires, even for a reward such as a solar calculator or $5. However valid these two reasons may be, it is still not clear whether these two segments of the population-those who could not complete the questionnaires and those who did not want to-may differ on the measured variables from those who could and did complete and return the questionnaires. Any conclusions drawn in the present

study should be qualified by the knowledge that the sample may or may not be representative of the larger population of adolescents with spina bifida.

This problem can be addressed only with additional research, perhaps in a clinic setting where those who participate and those who do not could be compared on some relevant measures. For example, Kazak & Clark (1986), studied self-esteem in children ages 6-13 with spina bifida, who were recruited through a medical clinic. They asked pediatricians and social workers who knew the families and were "blind" to whether the family had decided to participate in the study to rate "family adjustment". They found no significant difference on this measure between participants and nonparticipants in their study. To include such a procedure in future research designs would certainly strengthen such research.

Another problem with the present sample has to do with the fact that two-thirds of the participants were girls. It is true that more girls than boys born with spina bifida survive (Lonton, 1985), and that other studies of this population have contained a similar ratio of females to males (ie, Hayden et al., 1979, Kazak & Clark,1986). Girls and boys were studied separately, and there were some differences between them, not in mean self or observer ratings of self esteem, but in the correlates of self esteem. The separate

analyses of the two sexes should diminish the effects of the larger proportion of girls in the study. However, there may be instances where findings based on the total sample are affected by this ratio. The researcher has made an effort to be alert to these.

The age range of the study should also be considered. The study was originally designed to explore the correlates of self-esteem in adolescents with spina bifida, between the ages of 12 and 18. Four young people in the age range 19-22 also responded. Unfortunately, there were too few subjects older than 18 to create a separate age group. An examination of their self esteem scores showed them to be very similar to those of their gender who were age 18. Therefore, it seemed that their data was not unrepresentative and would only add to the power of the analysis. The decision was made to include these subjects, but it should be kept in mind that it is questionable whether they are representative of the total sample of young adults with spina bifida. The study should still best be considered a study of early and late adolescents, mainly ages 12-18.

Another methodological issue concerns the measures used. The subjects in the study ranged in age from 12 to 22. Some measures were standardized on a more specific age range. For example, the Perceived Competence Scale for Children was normed on a group of children aged 8 through 15. In spite of

the problems this might raise, the measures chosen appear to be the most appropriate to assess the variables of interest. Applying them to some children older than the normative range seems preferable to using several scales to measure the same concept and then trying to equate them in some way. The present study provided valuable data on the use of these scales with a special population. This data has been provided to the scale authors.

Another methodological question concerns the way in which the Perceived Competence Scale for Children was used. One subscale of this questionnaire was used as a measure of self esteem, and the others were considered measures of perceived competence. One might question whether it is appropriate to examine intercorrelations within a scale and draw conclusions from these.

However, this is one of the uses of the scale which Harter (1978) proposes. She states that, "In addition to these three subscales [perceived social, cognitive, and physical competence], there is a fourth subscale which measures the child's general feelings of worth or esteem, independent of any particular skill domain. The purpose of this type of scale structure is to examine a profile of the child's perceived competence across these different domains. It is not expected that subscale scores will necessarily correlate highly. Rather, it seems more reasonable to assume that a

given child will perceive himself as more competent in some domains than others" (Harter, 1978, p.58).

In the present study, the scale was used to assess the relative value of the separate skill domains to total self esteem. The researcher used the scale in this way in a previous study, and noted that the conclusions drawn using either the "self worth" subscale or the McDaniel-Piers Young Children's Self Concept Scale as the independent measure of self esteem were identical (Eckart, 1986). Since most other self esteem scales contain questions about specific competencies as well as global feelings of self worth, but make no distinction between them, using the "self worth" subscale may actually provide a less confounded measure of self esteem with which to compare specific perceived competencies. The fact that an observer rating of self esteem was also used, and led to many of the same conclusions as did the self-report measure, further supports the validity of this approach.

One of the measures used, the Physical Disability Identification Scale, is a new scale developed for this study. It was based on the Racial Identity Attitudes Scale (Helms & Parham, 1985), which provides moderate internal reliability and good convergent validity. However, the internal reliabilities (coefficient alpha) for the Physical Disability Identification Scale were disappointingly low. For

the Preencounter, Encounter, Immersion/Emmersion, and Internalization scales, internal reliabilities were .56, .42, .47, and .38., respectively. The scale probably measures the constructs intended, as evidenced by the fact that a hypothesis was supported. Much future research will be needed in order to refine this scale and gather test-retest and convergent validity data. The conclusions drawn in the present study based on this scale can be considered exploratory at best.

The conclusions of the study will also be limited by the cross sectional design. A longitudinal study would have provided a more accurate picture of self esteem changes for young people with spina bifida as they move through adolescence. Because of medical advances which were being developed in the 1960's and 70's, and which may have affected younger children more than older children, cohort effects cannot be ruled out. However, a longitudinal study was not possible given the time constraints involved. The researcher has a great interest in this area and would like to retest the subjects at a later date in order to gather longitudinal data on the correlates of self esteem in people with spina bifida. The findings of the present study will provide valuable direction for this future research.

One final methodological concern occurs regarding the use of the data from a 1986 study (Eckart, 1986) in the present

research. This data was collected several years ago, under different conditions than was the current data. Therefore, it would not be appropriate to analyse the 1986 data along with the present data and present it as a study of young people, aged 8-22, with spina bifida. However, the 1986 data on preadolescents with spina bifida is useful as a comparison group, and can be used to support or clarify many of the points in the present study. This is the manner in which the 1986 data has been used. The current research is an extension of the 1986 study, to which it is at times compared.

DISCUSSION

In the introduction, some theories of self esteem development in children and adolescents were discussed, past research was reviewed, and some predictions were made about adolescents with spina bifida. It was hypothesized that, in general, adolescents with spina bifida would have higher self esteem if they felt competent in various skill areas. Those who felt that their successes were the result of their own effort but that failures were not their fault, and did not feel that powerful figures or unknown forces were controlling their lives, were expected to have higher self esteem. It was predicted that those who held positive attitudes toward persons with physical handicaps would have higher self esteem than would those who held opposite views. It was also

predicted that the younger adolescents, ages 12 to 14, would have lower average self esteem scores than would those 15 and older. Feelings of internal control, and positive feelings about those with handicaps, were expected to increase with age. Girls and boys were expected to differ in their self esteem patterns, especially with respect to age.

The results of the study supported many of these predictions.

Adolescents with spina bifida who felt competent in various skill areas did tend to have higher self esteem, and were also rated as behaving more self-confidently by their parents.

Early adolescents who felt that their successes were the result of their own efforts but that failures were not their fault, and did not feel that powerful figures or unknown forces were controlling their lives, did have higher self esteem and were rated by their parents as behaving more self-confidently. The relationship between feelings of control and self esteem was generally not significant in the late adolescent group. Feelings of internal control <u>decreased</u> with age for adolescents with spina bifida. This was the opposite of what has been found in nondisabled groups.

Adolescents with spina bifida who expressed negative

attitudes toward those with physical disabilities did tend to have lower self esteem. This was especially true for older adolescents. Although it was predicted that negative attitudes toward those with disabilities would decrease with age, the reverse was found. For early adolescents, there was a positive correlation between age and negative attitudes toward those with disabilities.

There were no overall differences in self esteem between early and late adolescents, or between boys and girls. However, there was an interactive effect on self esteem between age and gender. In general, the self esteem scores of older girls were higher than those of younger girls, while the reverse was true for boys. There were many differences between boys and girls with spina bifida in the correlates of self esteem, as well as in how they were seen by their parents.

PERCEIVED COMPETENCE

The first hypothesis, that adolescents with spina bifida who felt competent in social, cognitive, and physical skills, as well as appearance and behavior, would have higher self esteem, was based on the theories of Harter (1978) and Coopersmith (1967). These theories state that feelings of competence in various areas are essential to self esteem. In the present study, feelings of competence in all of these

areas were related to self esteem, supporting the theories of Harter and Coopersmith. These findings are also consistent with a previous study of preadolescents with spina bifida (Eckart, 1986). It was expected that adolescents with disabilities would depend less on feelings of physical competence for self esteem than they would on other skill areas. This seems at first glance to be supported by the data. However, when boys and girls are studied separately, it can be seen that although there is no correlation between self esteem and perceived physical competence for girls, the self esteem of boys was positively correlated with perceived physical competence. In contrast, self esteem was highly correlated with feelings about being kind and well-behaved for girls, but not for boys.

This is consistent with traditional cultural norms about what is important for males and females. Studies of self esteem in nondisabled populations show a similar effect. For example, Simmons et al. (1979) found that doing well in sports was very important to self esteem for boys and less so for girls. Monge (1973) found that self esteem in boys was more likely to relate to achievement, while for girls it was more likely to relate to sociablilty. More recently, Wolf et al. (1982) found that good behavior was more of a concern to girls when rating their self worth than it was to boys.

Several feminist writers, including Gilligan (1983) and

Eichenbaum and Orbach (1983) have written extensively on the different core values held by males and females in our culture. These writers point out how the different expectations for men and women in our culture lead to different core values and world views for men and women. In general, females in our culture come to value affiliation over achievement, while males come to value achievement over affiliation. These values are reflected in the responses of the adolescents with spina bifida in this study.

The results of the present study suggest that adolescents with spina bifida, like nondisabled adolescents, rate their own self worth in congruence with the cultural norms for their gender. Affiliation and relationships with others are more important to girls than to boys, while physical skills are more important to boys than to girls. Those who feel that they "measure up" to the norms for their gender - kindness and sociability in girls and physical skills in boys - feel better about themselves. The presence of a physical handicap does not alter this effect.

Adolescents who rated themselves as competent in cognitive and social skills, and behavior, were most likely to be rated by their parents as displaying the self confident behaviors which were used as the measure of behavioral self esteem. Girls who reported that they behaved as they should were rated as more self confident by parents, while this was not

true for boys. This is consistent with the correlation between these two variables using a self-report measure. Boys who rated their cognitive competence highly were seen as behaving more confidently by parents, but this was not true for girls. It may be that the parents' ratings reflect their different expectations for girls and boys, or it may be that the observer measure is recording behavior differences which are again related to cultural norms. It is possible that adolescent girls who do well in school do not behave as self confidently as do boys who achieve in school, because school achievement has more negative impact on "popularity" for girls than for boys at this age.

The adolescents' ratings of their physical competence, and their appearance, correlated with a self report measure of self esteem, but not with observed self esteem. Adolescents who reported feeling competent in these areas also reported feeling more positive about themselves, while according to their parents, their behavior did not reflect this. This might be interpreted in several ways.

Savin-Williams and Jaquish (1981) express the view that when self report and observer report of self esteem do not match (as was true in their study), self reported self esteem can be considered a distortion of the truth, and an observer rating of self esteem should be considered more accurate. According to this view, then, the adolescents are not rating

their physical skills and appearance accurately. Elliot (1982) states that individuals are more likely to overrate their abilities, presenting a "false front", when their self esteem is lower. Adolescents with spina bifida might be expected to have more concerns about their physical skills and appearance than about any other areas. It may be that self and observer report do not match in these areas because the adolescents are exaggerating or distorting when they report their competence in these two areas of concern.

However, there are other explanations. Although Savin-Williams and Jaquish express the belief that self report is more likely to be a distortion than is an observer rating, an observer also gives a rating which is filtered through his or her own expectations, perceptions, and awareness. A parent rating his or her own child is subject to distortion as much as is the child in rating himself. It may be that it is the parents of these adolescents who worry about their children's appearance and physical skills. The adolescents may be accurately rating their <u>feelings</u> of competence in these areas, but if their perceptions are different from those of the parents, the parents may see the child as lacking in some way and thus judge his or her behavior as less self confident.

For example, suppose that a boy who feels he is good in school is also seen as good in school by his parents. He

might rate his cognitive competence highly, and since having a child who is "bright" is a value to parents, they may see him as a confident boy. Thus his rating of competence in this area and the parent rating of his self esteem would correlate. However, suppose that he sees himself as physically competent because he can get around on crutches or compete in wheelchair sports. His parents may not see him as competent in the same way, and they may worry about whether he is a confident boy. This may affect how they rate his behavior. In this area, his rating of his competence and his parent's ratings of his behavior may not match, not because he is presenting a false front, but because his parents' perception of him influences the behavioral rating.

It is true that most studies which employ both self and observer report measures of self esteem find a discrepancy. Savin-Williams and Jaquish (1981), Michael and Plass (1973), and Harvey and Greenway (1982) all failed to find any correlation between self and observer report of self esteem. Coopersmith (1967), who was the first to propose these two methods of measurement of self esteem, also failed to find a consistent relationship between them. He suggested that self and observer report of self esteem were measuring two different aspects of the self. It is possible, according to Coopersmith, to present oneself in a manner not entirely consistent with one's subjective sense of self worth.

Coopersmith's position would lead to the conclusion that the adolescents are accurately rating their feelings of competence in these two areas, but that their subjective feelings are not reflected in their behavior. According to this view, both parent and child are providing a fairly accurate rating, but they do not always correlate because they are measuring different things. Michael and Plass (1973) advance a similar explanation to explain why self and teacher ratings of social skills did not correlate in their study.

This study does not resolve this dilemma. The meaning of discrepancies between self and observer measures of self esteem is not clear. Any of the above theories could be supported. This researcher takes the third, and perhaps simplest, position, which is that self and observer reports of self esteem measure different aspects of self esteem. The fact that they show the same effect in many instances is perhaps more surprising than is the fact that they at times differ.

In the present study, the fact that adolescents who reported feeling competent in physical skills and felt good about their appearance also reported feeling more positive about themselves, while according to their parents their behavior did not reflect this, is accepted at face value.

However, adolescents whose teachers rated them highly in cognitive and social skills were also likely to be seen by their parents as behaving self confidently. The two observer measures related to one another while the self report measure seemed to be measuring something different. It seems that self perceived competence related more to self esteem than did teacher rated competence. Ratings by parents and teachers were in general agreement and seemed to be measuring something related to but distinct from subjective feelings about the self.

It was also predicted that there would be no significant difference between the child and teacher ratings of cognitive or social competence. However, adolescents with spina bifida were expected to rate their physical skills more highly than would their teachers.

This prediction was based on the findings of the previous study of preadolescent children with spina bifida (Eckart, 1986). In this study, the children with spina bifida rated themselves as significantly more physically skilled than did their teachers. Comments made by both teachers and children in this study led to the conclusion that the children were defining "physical skills" differently than the teachers. This conclusion was further supported by the finding that identification with the physically handicapped was correlated

with self esteem in this group. The children seemed to feel that they did pretty well at sports and games considering their handicap, while the teachers (who expressed much the same feeling) seemed to be rating them according to the standard of other nondisabled children.

In the present study, adolescents with spina bifida again rated their physical skills significantly higher than did their teachers. The effect was not as strong as that in the previous study, and a comparison of group means revealed that preadolescents in the first study rated their physical skills higher than did adolescents in the present study, although the effect was not statistically significant. When data form both studies was analysed together, a small negative correlation which approached significance was present between age and perceived physical competence.

Adolescents in the present study, like preadolescents in the previous study, seemed to be defining physical skills differently than did their teachers. Some of the adolescents made it clear that they were using those with disabilities as a reference group in this area. For example, the word "wheelchair" was inserted into questions about sports (ie, "Some kids do very well at all kinds of <u>wheelchair</u> sports"). Teachers included many positive comments about the adolescents' physical abilities, such as "Bobby enjoys any game that he is permitted to participate in" or "Joan won

several prizes recently in wheelchair games." However, in spite of the impression the teachers gave of being impressed by the children's effort and participation, it seemed obvious that they were rating their physical skills "objectively" using nondisabled children as the standard. The adolescents, on the other hand, seemed to define their physical skills in terms of their handicap. This in turn may have helped them to preserve their self esteem.

Such a tendency has been observed in other studies. Michael and Plass (1973) asked 30 sixth grade students to complete self concept measures, and compared these to their teacher's ratings of them on the same instrument. The teachers and children showed no significant differences in their rating of the child's mental health, personal self, or academic self. However, the children rated themselves differently in terms of "social self" than did their teachers. Michael and Plass concluded that the teachers were defining this construct very differently than were the students.

Studies with special populations are even more likely to show this effect. Pike (1985) noted with surprise that a group of severely disabled asthmatic children rated themselves similarly to a control group on the physical competence subscale of the Perceived Competence Scale for Children. She hypothesized that since all of the children

were hospitalized on a medical unit for children with asthma at the time of the study, they may have been using children with similar disabilities as a reference group. Harter (in press) noted that children with mental retardation or learning disabilities have higher self esteem scores if they compare themselves to others with similar educational handicaps. In the present study, adolescents with spina bifida seem to be using the disabled as a reference group, and therefore rating their physical skills more highly.

This tendency, noted in the 1986 study, is not as strong in the present study. It is interesting to speculate on why this might be so. It may relate to the cognitive changes during adolescence which are described by Elkind (1967). Elkind describes adolescent psychology in terms of Piagetian stages. When adolescents attain the formal operational stage of thought, they become more able to take the position of others and see themselves as others see them. Adolescents with spina bifida may still be defining physical competence in terms of their disability, but as they grow older they may be more aware of the difference between how they see themselves in this regard and how others (such as teachers) see them. This may in turn lead to a tendency for them to see themselves as less physically skilled as they grow older.

An unexpected finding in the present study concerns the relationship of teacher to self ratings of cognitive

competence. There was expected to be no significant difference here, as found in the previous study (Eckart, 1986). However, adolescents in the present study rated themselves as significantly lower in cognitive competence than did their teachers. When adolescents in special class placement were compared to those in regular class placement, it was found that those in regular class placement saw themselves as lower in cognitive competence than did their teachers. This effect was not present for adolescents in special class placement.

Group t-tests showed that it was the perceptions of the teachers, and not of the students, which differed for the two groups. Teachers of adolescents in regular classes saw their students as being more cognitively competent than did teachers of special classes. This may be an accurate perception. However, it is not reflected in the self-ratings of the two groups of students.

This result is difficult to interpret. It may be that the adolescents in regular classes are comparing themselves unfavorably to their nondisabled classmates. Why this should be so in the area of cognitive skills and not physical skills is unclear. This is an interesting and unexpected finding which should be investigated with further research.

PERCEPTIONS OF CONTROL

It was predicted that adolescents who felt that success experiences were the result of their own efforts, and that failures were not their fault, would tend to have higher self esteem. Those who did not feel that powerful others or unknown forces had a great deal of control in their lives were expected to have higher self esteem.

These predictions were based on research which shows the first effect with both adults (Arkin et al., 1980) and children (Harter, in press). Although the tendency to feel that one has control over event's in one's life (referred to as an "internal locus of control") has been generally considered most adaptive (Lefcourt, et al., 1981), when perceptions of control over positive and negative outcomes are studied separately, another pattern emerges. The tendency to take credit for one's successes, and to deny responsibility for failure, is known in the social psychological literature as the "self serving bias." The above cited studies, among others, have found this defense mechanism to be related to high self esteem. It may be especially appropriate for minority populations (including individuals with handicaps) since discrimination is more likely to have an influence on negative outcomes in these populations. To hold oneself responsible for a negative outcome which was in reality affected by discrimination would

be self blaming and detrimental (Sue, 1981).

The results of the present study support these predictions, but only for the age group 12-14. Adolescents with spina bifida ages 15 and older did not show this effect. Although all correlations were in the expected direction, none were significant for the older group.

For early adolescents with spina bifida, ages 12-14, taking credit for successes and not for failures is associated with high self esteem. The value of the "self serving bias" in preserving self esteem is supported for this age group. Also, feeling that one is controlled by powerful others and unknown forces is related to low self esteem.

However, older adolescents with spina bifida did not show the same relationship between perceptions of control and self esteem. An examination of the relationship between observed self esteem and perception of control shows that the relationships are again weaker in the older adolescent group. Older adolescents seem to both feel and display less self esteem in regards to being able to affect outcomes. They do not show a relationship between the "self serving bias" and self esteem, or a negative effect on self esteem due to perceptions of control by unknown and powerful forces.

One could speculate that as adolescents with spina bifida

grow older, the types of outcomes which they are trying to affect may change. This in turn may affect their ability to relate control to self esteem. For example, younger children may easily be able to connect the experience of studying hard to doing well on a test, and this in turn affects their self esteem. However, older adolescents with spina bifida may feel positively about doing well on a test one day, but negatively about their prospects for finding a part-time job the next day. As the developmental tasks facing them change - from being well-liked in school and doing well academically, to finding a job and relating to the opposite sex - there may be a period in which the reinforcements for control and lack of control are not so clear-cut. Adolescents at this age may not be able to make the same connections between control and feeling good about the self because controlling an outcome is no longer simple.

It is also interesting to note the differences between adolescent boys and girls on these variables. Boys show a strong positive correlation between perceptions of internal control over positive outcomes and self esteem, while girls do not. Conversely, girls show a greater negative correlation between self esteem and control by unknown forces over positive events than do boys.

The difference noted between boys and girls in the relationship between internal control and self esteem is

consistent with cultural expectations for masculine and feminine behavior. Boys are expected to be more powerful and to be more in control than girls in order to be "masculine." Studies of adolescent self esteem have demonstrated that boys and girls do see themselves differently based on these sex role expectations.

For example, Monge (1973) showed that self esteem in adolescent boys depended more heavily on feelings of achievement and leadership, while for girls it depended more on perceptions of social acceptance. Weinberg (1970) studied depression and suicide in adolescents with chronic illness. She found that boys were more likely to be depressed when their illness interfered with their sense of control and competency, while girls were more likely to be depressed when their illness was perceived as causing rejection by others. Campbell, et al. (1977) surveyed adolescents with spina bifida, and found that the areas of greatest concern for girls were isolation and loneliness, while for boys the greatest concerns were about mastery and sexual potency.

These studies provide examples of the ways in which sex-role socialization affects the correlates of self esteem. Internal control over positive events - being able to cause good things to happen - seems to be much more important to a sense of self worth for boys than it is for girls. These sex-role differences are highlighted in adolescence, when

defining oneself in terms of gender roles is an important part of identity formation. This task may be more difficult for an adolescent with a physical disability, who may be very concerned with living up to the expectations of masculinity or femininity. In the present study, the data supports a gender difference in the relationship of perceived control to self esteem. For boys, the critical variable is being in control. Boys who did not feel that they could control positive outcomes tended to have lower self esteem. For girls, a different sort of lack of control was important. Girls who felt that they did not know why good things were happening tended to have lower self esteem.

Parent ratings of the adolescents' behavior (observed self esteem) in general corroborated the adolescents' self report, and supported the research hypotheses. Adolescents with spina bifida who felt that powerful others and unknown forces had control in their lives were rated as behaving less self-confidently by their parents. There was behavioral evidence that feeling controlled by powerful others and unknown forces is related to lower self esteem.

In contrast, the adolescent's perceptions of <u>internal</u> control, over both positive and negative outcomes, had no relation to their parents' rating of their behavior. When boys and girls were studied separately, however, it was shown that boys who felt that they could make positive things

happen were rated as behaving more self confidently by their parents. This was not true for girls. This is consistent with the adolescents' self report. Boys who felt that they could control positive outcomes felt better about themselves, while for girls there was no relationship between these two variables. Failure to find this effect in the total group may be due to the large proportion of girls in the sample.

However, in no group do the parent ratings of observed self esteem correlate negatively with perceptions of control over negative events. Adolescents who feel that failures are not under their control report feeling better about themselves. According to their parents, their behavior does not reflect this. The present study provides no behavioral evidence for the value of the "self serving bias."

PERCEPTIONS OF CONTROL AND AGE

Studies of nondisabled populations have generally shown that perceptions of internal control increase with age (Knoop, 1981, Sherman, 1984). Rosenberg (1979) states that as children reach adolescence, they begin to shift from external to internal attributions for many outcomes. However, in the present study, perception of internal control over positive outcomes was negatively correlated with age for adolescents with spina bifida. This was true for girls as well as boys. The older adolescents in the study perceived

significantly less internal control than did the younger ones.

This finding may reflect a real developmental change which occurs as adolescents with spina bifida grow older. However, because this is a cross-sectional study, it may also reflect a cohort effect of unknown origin. Further study with this sample will be done in order to provide longitudinal data and to clarify this finding. For the present study, it can be noted that a trend toward lower perceptions of internal control with age in this population is suggested. The results will be discussed in light of this suggested trend.

Harter (1979) states that success experiences are necessary for the development of a sense of internal control. Lefcourt (1976) states that changes in the sense of personal control depend on mastery of the key tasks of life. It may be that as the tasks of adolescence change with age, they become increasingly difficult for the adolescent with spina bifida to master.

A previous study of preadolescents with spina bifida (Eckart, 1986) showed no significant difference between the group with spina bifida and the normative sample in perceptions of internal control. Preadolescents with spina bifida, ages 8-12, do not appear to feel less of a sense of internal control than do their nondisabled peers. Yet the

present study suggests that adolescents with spina bifida may feel less internal control as they get older.

It may be that the developmental tasks of preadolescence, such as doing well in school and getting along with peers and siblings, pose less of a problem for young people with spina bifida than do the tasks of adolescence. Independence, sexual relationships, and vocational planning are some of the tasks which become increasingly salient as one moves through adolescence. These are areas in which adolescents with spina bifida may be feeling increasingly less able to take control and cause positive outcomes. This may also be related to the finding, discussed above, that the correlation between perceptions of control and self esteem is weaker in the older adolescent group.

AGE, GENDER AND SELF ESTEEM

Based on theories of the psychological vulnerability caused by adolescence, as well as research which shows self esteem changes in the early adolescent years, it was predicted that early adolescents, ages 12-14, would show lower self esteem scores than would those age 15 and older. It was also predicted that girls and boys would show different patterns of self esteem. The finding in this regard was not exactly as predicted, but is consistent with the discussion of self esteem in boys and girls up to this

point.

An analysis of variance (ANOVA) showed no difference between the early and late adolescent groups, or between boys and girls, on self esteem scores. However, a significant age group by gender interaction was found. Examination of cell means showed that younger girls had lower self esteem scores than did older girls, while younger boys had higher self esteem scores than older boys. There was a positive correlation between self esteem and age for girls, but a negative correlation between these variables for boys. For girls alone, the prediction that self esteem would be lower in the early adolescent group than in the late adolescent group was supported. Boys showed an unexpected opposite effect.

Again, it must be noted that because of the cross-sectional design, cohort effects cannot be ruled out. The present study suggests a trend which must be investigated with longitudinal data. The present results will be discussed in light of this trend.

An issue which should be addressed in reviewing these findings is whether the age and gender group differences are confounded with the onset of puberty. Average age of onset of puberty in the general population is 14.5 for boys, and 12 for girls. This would cause a confound between onset of

puberty and age group. However, studies show that both boys and girls with spina bifida experience early onset of puberty (Green et al., 1985). Therefore, it is likely that the majority of both boys and girls with spina bifida go through puberty before age 15. The adolescents in the 15 and older group, both boys and girls, should have already reached puberty. Therefore, onset of puberty should not be a significant confound. However, in future research with this population it would be interesting to look at age of onset of puberty as a variable.

The finding that younger girls have lower self esteem than older girls, while younger boys have higher self esteem than older boys, is consistent with the discussion so far. If feelings of internal control are more important to self esteem for boys, and feelings of internal control decrease with age for young people with spina bifida, then it is not surprising that the self esteem of boys with spina bifida decreases with age as well. Since the correlates of self esteem differ for boys and girls, the tasks of adolescence may have different meanings to the two sexes. It may be that the tasks facing adolescent girls with spina bifida, while difficult, are affected less by the disability than are the tasks most important to boys.

In the present study, girls between the ages of 12 and 14 have the lowest self esteem scores. This is consistent with

literature on self esteem in the nondisabled population. Blyth, Simmons, and Bush (1978), and Simmons et al. (1979) found that early adolescent girls, ages 12-14, tended to have lower average self esteem scores than boys and to be more negatively affected by external stresses. Hayden et al. (1979) studied self esteem in adolescents with spina bifida, and found that the younger girls had lower adjustment and self esteem scores than either boys or older girls. Early adolescence seems to be an especially stressful time for girls, whether they have a disability or not.

Later adolescence may be a more stressful time for boys who have a physical handicap. The present study demonstrates that good behavior and kindness are important to self esteem for adolescent girls with spina bifida, while perceived physical competence, and feelings of internal control, are more important for boys. This suggests that the correlates of self esteem for boys at this age relate to tasks which are made more difficult by the presence of a physical handicap.

Other studies have shown this pattern as well. Dorner (1976) interviewed 46 adolescents with spina bifida, and reported that they all had many worries about work, sexual relations, and marriage. However, these themes worried the boys more than the girls. Hayden et al. (1979) also reported that adolescent boys with spina bifida worried most about mastery of the environment and sexual potency, while girls

worried most about socialization, isolation, and loneliness.

Weinberg's (1970) study of depression and suicide in adolescents with chronic illness also addresses this issue. As noted above, she found that boys were more likely to be depressed when their illness interfered with their sense of control and competency, while girls were more likely to be depressed when their illness was perceived as causing rejection by others. Weinberg theorized that having a chronic illness had a different effect on boys and girls because of their sex role socialization. Although disruptive for all the adolescents, having a chronic illness was less disruptive to the adjustment of girls than to that of boys because being in a passive or dependent role was more congruent with their socialization as "feminine," and therefor easier to tolerate. Having a chronic illness also was likely to bring caring and concerned treatment from others, which was more important to the self concept of the girls. Chronic illness was likely to have a more negative effect on boys, since it interfered with control and independence, which are more important to a "masculine" identity in our culture.

The tasks of adolescence may be less affected by a physical handicap for girls, because of their sex role expectations, than for boys. This may explain why self esteem and age are positively correlated for girls but negatively correlated for

boys.

IDENTIFICATION WITH THE PHYSICALLY HANDICAPPED

Based on theories of identification with other minority groups, such as black persons or gay and lesbian individuals, it was hypothesized that children with spina bifida might go through stages in their identification with and feelings about people with physical disabilities. Helms and Parham (1985) describe stages of Preencounter, Encounter, Immersion/Emmersion, and Internalization. These stages represent a transition from accepting majority views of one's group and denigrating the self, through a period of rejecting these views and holding the opposite views, to a period of acceptance and pride in one's group membership as only one important facet of the self. Wright (1960) describes similar transitions in the development of feelings about the self for individuals with handicaps. It was hypothesized that in the present study, young people with spina bifida would go from a stage in which people with physical handicaps were denigrated, and in which the young person would not want to associate with others with handicaps, toward a period of acceptance and identification with others with handicaps. The former attitudes were hypothesized to correlate negatively with self esteem while the later were expected to have a positive correlation.

The theoretical basis for this prediction is clear, but the results were much less clear. The measure of identification developed for this study, the Physical Disability Identification Scale, showed poor internal reliability. Therefore, it is not a good measure of the concept it is designed to operationalize. Because of the difficulties encountered in providing a large enough sample of young people with spina bifida, it was not possible to do a pilot study and refine the measure beforehand. Regrouping of the items based on factor analysis of the present results yielded subscales with internal reliabilities (coefficient alpha) in the 60's and 70's. However, these did not have the face validity that the scales modeled on Helms and Parham's scale did. Nor did these "refined" scales show any of the predicted relationships with self esteem. Much research with this scale is needed before it can be considered a valid psychometric measure.

In spite of the problems with the Physical Disability Identification Scale, the hypothesis that Preencounter attitudes would be negatively correlated with self esteem was partially supported. (This scale had an internal reliability of .56.) There was no relationship between observed self esteem and any of the Physical Disability Identification Scale subscales. However, there was a negative correlation between self reported self esteem and score on the Preencounter scale, which was significant at the .02 level.

This indicates that adolescents with spina bifida who hold negative attitudes toward those with disabilities, and do not wish to be associated with others who have disabilities, are less likely to feel good about themselves. This relationship was stronger for boys than for girls, which may again support the theory that the tasks of adolescence are more difficult for boys with a physical handicap than for girls. Negative self attitudes toward those with physical handicaps may have a more detrimental effect on self esteem for boys.

This finding suggests that those who do not mind being grouped with others with disabilities have higher self esteem. Earlier in the discussion, it was noted that adolescents with spina bifida rated their physical skills more highly than did their teachers. It was hypothesized that this related to the adolescents using those with disabilities as a reference group when rating their skills. The present results suggest that those who do not resist such comparisons do have higher self esteem. This is especially true for boys, who depend more heavily on feelings of physical competence for self esteem.

The prediction that Internalization attitudes would be positively correlated with self esteem was not supported by the data. There was no correlation between positive attitudes toward the disabled and self esteem. In addition, the expected increase of positive attitudes toward the

disabled with age was not found. Instead, a positive relationship between age and negative attitudes toward the disabled was found for the early adolescent group.

These findings, were not predicted, but are consistent with the theories of Elkind (1967) which are based on the work of Piaget. Elkind states that as the adolescent attains the stage of formal operational thought, he or she becomes able for the first time to see himself or herself as others might. This new ability leads to adolescent egocentrism and self-consciousness, because the adolescent can now picture what others might think of her, but is not able to realize that others are not as concerned with her appearance and behavior as she is.

Early adolescents, who are just reaching this formal operational level of thought, may be most likely to be realizing and incorporating the negative attitudes of society toward the disabled. Thus it is not surprising that early adolescents with spina bifida show an increase in Preencounter (negative) attitudes toward those with disabilities. It may be that Encounter attitudes, and eventual acceptance of oneself as an individual with a disability in a primarily nondisabled world, come at a later stage of cognitive and emotional development. Perhaps there is no correlation between Internalization scores and self esteem for these adolescents because Internalization

attitudes are not fully formed in this age group.

Anecdotal evidence supports such a theory. Wright (1960), in her book on the psychology of physical disability, presented the life stories of individuals who grew up with such physical handicaps as blindness, deafness, and disabilities caused by polio. They describe their wish to act "as if" the disability did not exist, and their belief that because of the disability they were somehow not as good as others. This belief lasted until some critical event or events in their college or early adult years began to change the way they perceived their abilities and disability.

Cronin-Noe (1987), who was born with handicaps caused by prenatal exposure to Thalidomide, wrote about her life as a person with a physical disability. Her story presents another example of a change from Preencounter to Internalization attitudes which occurred in adult life. She describes how in college she angrily tore up letters from handicapped student groups, not wanting to be associated with those with handicaps. However, she later became interested in the problems of those adjusting to physical handicaps caused by accidents or trauma. After graduation from college she worked as a rehabilitation counselor and is now in graduate school working towards a degree in this area.

Further research in this area could focus on whether the

stages of identification are as predicted, but develop more slowly over the teen and early adult years. This would be consistent with the theories on development of minority group identity as well as the present findings.

OTHER RELATIONSHIPS OF INTEREST

Based on past research, it was difficult to make a prediction regarding the correlation between degree of physical disability and self esteem. Some studies have demonstrated a negative correlation (eg. Dorner, 1975, Macbriar, 1979), while other studies have shown that other factors such as the child's perception of the disability, or family adjustment, are more important in predicting self esteem than is the disability itself (eg. Hayden et al., 1979, Kolin et al., 1971). The previous study of preadolescent children with spina bifida (Eckart, 1986) showed no relationship between self esteem and degree of disability.

In the present study, there was again no significant correlation between self esteem and degree of disability. However, degree of disability ratings were available on only a minority of the subjects. It would be difficult to draw any conclusion on the matter based on the present study.

Past research has also shown relationships between school

type and self esteem, as well as between special or regular class placement and self esteem. Simmons et al. (1979) showed that girls who went from an elementary to junior high school were more at risk for low self esteem than were girls who went from sixth to seventh grade in the same school. Dodd (1984) found that children with spina bifida who were in a special school had higher self esteem scores than those in a regular school. Pearson, Carr, and Halliwell (1985), however, found no difference in self esteem scores between those in special and regular class placement.

In the present study, no relationship was found between self esteem and school type, or self esteem and special or regular class placement. A 2x2x3 ANOVA with gender, school type, and classroom as the conditions showed no main effects and no significant interactions. In the present study, conditions such as school type and regular or special school placement had no relation to self esteem.

SUMMARY

This study explored the correlates of self esteem for adolescents, ages 12-22, with spina bifida. Although it is a cross-sectional study, and no conclusions about development can be drawn, it does suggest some age and gender related trends which should be explored further.

This study, like a previous study by this researcher (Eckart, 1986), sought to answer questions such as, "What is related to good self esteem for a young person with spina bifida? How does a child with this disability who has high self esteem differ from one who has low self esteem? How does this change as the individual grows older? Are the variables the same for males and females?"

The results of the study suggest that adolescents with spina bifida who feel competent in various skill areas, feel that success are the result of their own efforts but that failures are not their fault, do not feel controlled by unknown or outside forces, and do not mind being identified with others who have physical handicaps, tend to have higher self esteem. The correlates of self esteem are somewhat different for males and females, and different for adolescents at different ages.

The boys and girls with spina bifida showed correlates of self esteem which were very much related to sex role expectations for our culture. Self esteem, for boys, was positively correlated with perceived physical competence and perceptions of control over positive events. For girls, self esteem was positively correlated with perceptions of kindness and good behavior. Parent ratings of the adolescent's self esteem confirmed that girls and boys who rated themselves as competent in these areas seemed more self confident than

those who rated themselves as less skilled in these areas.

The different pattern of correlates of self esteem for girls and boys may affect the development of self esteem over the adolescent years. The data showed that younger girls were likely to have lower self esteem than older girls, and that for girls, self esteem was positively correlated with age. This is consistent with research on populations of adolescents without disabilities. For boys, the relationship was in the opposite direction. Younger boys had higher average self esteem scores than did older boys, and there was a negative correlation between age and self esteem for boys.

This suggests that the tasks of adolescence are more difficult for boys with spina bifida, who are concerned with physical ability and control, than for girls with spina bifida, who are more concerned with social behavior. The pattern of self esteem development for girls with spina bifida is similar to that in the general population, while for boys with spina bifida there seems to be an obstacle to development of positive self esteem. The present study is congruent with other research which shows that a disability or illness may be more disruptive to the development of a healthy "masculine" identity than to a healthy "feminine" identity during adolescence. This may be because the dependency and lack of control, as well as the concerned treatment by others, which can be associated with a

disability is more consistent with "feminine" socialization than with "masculine" role expectations.

The adolescents' perceptions of their skills correlated with self esteem, both as measured by self-report and observer ratings. Teacher ratings of the adolescent's skills did not correlate with the adolescent's self esteem. This suggests that it is the adolescents' perceptions of their skills, and not their "actual" skills as rated by an observer, that affects self esteem.

Perceptions of control were related to self esteem for adolescents with spina bifida, but these relationships held only for the younger age group. Early adolescents who felt that they could control positive events but were not to blame for negative events had higher self esteem. This is consistent with the "self serving bias." Early adolescents who felt that powerful others and unknown forces had control over positive and negative events had lower self esteem scores, as predicted and as found for preadolescents (Eckart, 1986). These relationships were not found for the late adolescent group.

Perceived internal control over positive outcomes had a negative correlation with age for both boys and girls. Adolescents with spina bifida felt less in control of good things in their life the older they were. This is

hypothesized to relate to the developmental tasks of adolescence. Early adolescents may feel more in control because the tasks at that stage of development, such as doing well in school and being accepted by peers, are easier for those with spina bifida than the more stressful tasks of forming relationships with the opposite sex, becoming independent from parents, and looking ahead toward vocational goals.

Conclusions about stages of identification in this group were hampered by the modest internal reliability of the scale developed to measure this construct. However, there was support for the hypothesis that negative attitudes toward those with physical handicaps, called Preencounter attitudes, were negatively correlated with self esteem.

It was predicted that these attitudes would decrease with age. However, it was found that they were positively correlated with age for the 12-14 year old group. This finding was interpreted in light of Elkind's theory. He proposes that the ability to take another person's viewpoint develops during early adolescence. An acceptance of prevailing negative social attitudes toward those with handicaps would thus be most likely for adolescents at this age. It was hypothesized that these attitudes may begin to decrease in the early adult years, and more positive attitudes take their place. Further study might be done to

refine the measure of identification and to test this theory.

In summary, the present cross-sectional study of adolescents with spina bifida cannot be conclusive in its findings about age related trends in self esteem for this group. However, it does suggest some trends which can be explored in future studies. It also suggests some gender differences in the correlates of self esteem, which have implications for the adjustment of young people with spina bifida.

DIRECTIONS FOR FUTURE RESEARCH

The present study suggested that girls with spina bifida follow the same general pattern of self esteem development as do girls without disabilities. However, it also suggested that boys with spina bifida show a drop in self esteem over the teen years. This is a finding which can be investigated further by asking the subjects from this study to complete the questionnaires again at a later date. By following this sample longitudinally, the researcher can shed light on the question of whether the current findings represent a developmental trend or are due to cohort effects.

Another question which could be addressed by future research is whether the onset of puberty affects self esteem in adolescents with spina bifida. Although both boys and

girls with spina bifida experience early onset of puberty, it is expected that girls will still be a year or two ahead of boys in terms of physical development. Girls may also be more advanced socially than boys at the same age. Therefore, girls and boys with spina bifida may have very different experiences at the same age. The present study does not address these issues. Future research could include age of onset of puberty, or some measure of physical maturity, as a variable in the study of self esteem development. It would be interesting to investigate whether this is correlated with self esteem, and whether the effect is different for boys and girls.

A major disappointment in the present study was the poor reliability of the Physical Disability Identification Scale and the failure to find the predicted developmental trends. This researcher believes that young people with disabilities do follow certain stages in the development of an identity as a person with a handicap, and that these stages are related to self esteem. A major direction for future research will be to refine the measure of identity development and to investigate a wider age range, especially including young adults with spina bifida.

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APPENDIX A: SCALES AND DIRECTIONS

Contents:

Letter to parents
Consent to participate in a research study
Letter to parents contacted through Shriner's Hospital
Permission to contact teachers
Behavior Rating Checklist ("My Child's Self Esteem")
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 Letter to subjects
 Directions for Perceived Competence Scale for Children
 Perceived Competence Scale for Childre ("What I Am Like")
 Directions for Children's Perceptions of Control Scale
 Children's Perceptions of Control Scale ("What I Think")
 Physical Disability Identification Scale ("How I Feel")
Follow-up letter to parents
Second follow-up/brief questionnaire
Letter to teachers
Teacher Rating Scale Of Child's Actual Competence
Follow-up letter to teachers

University of Cincinnati

McMicken College of Arts and Sciences

Department of Psychology

Dyer Hall (ML 376)
Cincinnati, Ohio 45221-0376

Dear parent,

I am a graduate student at the University of Cincinnati, and I have just finished a study about self esteem in children with spina bifida. My study asked the question, "What is a child with spina bifida who has good self esteem like? What is related to good self esteem for a child with spina bifida?". The results provided information which has been very helpful to parents and professionals. Only children ages 8-13 were included in that study, and now I would like to find out more about self esteem in teenagers with spina bifida.

That's why I am contacting you, with the help of the Spina Bifida Association. I am hoping that you and your family can help me to find out more about what is related to self esteem for teenage children with spina bifida. It will take about an hour of your time, and will be very helpful to all of us who are interested in the development of children with spina bifida. To show my appreciation to your child, I would like to send him or her a solar pocket calculator in the mail as a gift for participating.

If you do help with the study, your privacy, and that of your child, will be assured. As you can see, the questionnaires I have enclosed each have the same number on top. Each family has a different number. When I look at the questionnaires, I will use only the numbers and no names. In this way you can be guaranteed that no one can look at the questionnaires and find out about you or your family. There are some parts to this package which have your child's name on them, such as the permission forms. I will separate these from the questionnaires as soon as I receive them.

Enclosed you will find a letter addressed to your child who has spina bifida. It asks him or her to participate in the study, and tells how to get a free gift in the mail for doing so. You will also find some questionnaires and permission forms. If you are willing to help out with the study, please use them in the following way:

1) Read the directions, and look over the questions on, the questionnaires titled, "What I Am Like", "What I Think" and "How I Feel". Then give them to your child and explain the directions. It's important to make sure your child

An affirmative action/equal opportunity institution

understands the directions, but it's also important for you not to help with the answers. Please give your child some privacy so that he or she will not feel shy about answering the questions. Remind him or her that no names will be used.

2) Please fill out the questionnaire titled "My Child's Self Esteem". You and your spouse can do this together if you wish, but it's OK if only one parent fills it out, too.

3) There is a permission form that allows me to send your child's teacher a questionnaire similar to the one you filled out. If this is OK with you, please sign this form and include your child's name and the name and school address of a teacher who knows him or her well. I will send the teacher this permission form, a letter, and a questionnaire. The questionnaire will have your child's number on it, so that when the teacher sends it back to me there will be no name used.

4) Have your child sign the gift card. He or she will receive a free gift in the mail. The gift is a solar pocket calculator. Enclose all the materials (questionnaires, permission forms, and the card) in the stamped envelope and drop it in the mail. In a few weeks your child should receive the free gift.

It will probably take about 6 months to complete the study, but once I do, you will get a copy of the results in the mail.

When all of this is done, please talk to your child and make sure he or she feels OK and is not upset about any of the questions. Most of the children in my last study enjoyed being asked about themselves and felt important to be in a study. But it's possible that a child might be upset by having to answer a lot of questions about how he or she feels. This might be a good opportunity to talk with your child about his or her feelings about many things.

If you have ANY questions about the study, you can call me at the University of Cincinnati at (513) 475-2941. I will be glad to answer your questions or help you in any way. By encouraging your child to fill out the questionnaires, you will be benefitting many people who are interested in helping children with spina bifida to grow up to have good self esteem. Thank you for your participation.

Sincerely,

M. L. Eckart

M.L.Eckart

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Before agreeing that my child or I will participate in a research study, it is important that I read and undrestand the following explanation.

I, _____, of _____,
parent/guardian address, city, state

voluntarily consent for my child,_____(___),
name, (age)

to participate in a research study, the purpose of which is to find out more about the factors which relate to how a child with spina bifida feels about him or herself. The researchers are interested in how a child's sense of control of events, feelings of competence, competence as rated by a teacher, identification with the physically handicapped as a group, age, and gender, relate to his or her self esteem.

I understand that the results of this study may have no direct benefits to myself and my child. However, in providing information about what helps a handicapped child to feel good about him or herself, it may in the future help parents and professionals to facilitate the emotional growth of such children.

There are no physical risks or discomforts to my child involved. The study may take from 1-2 hours of his or her time. In rare cases, a child may be upset or disturbed by answering some questions about how he or she feels. I understand that I can contact (local spina bifida chapter president or Dr. Preslar of Shriner's Hospital) if I have questions or concerns. I can also contact the principal researcher, M.L. Eckart, at (513) 475-2941 during working hours.

I understand that my child and I are under no obligation to participate in this study, and that his or her medical treatment will not be affected in any way by either my consent or refusal to participate. My child and I are free to withdraw from the study at any time.

I understand that the replies my child gives to the forms are strictly confidential. No names will be used on the forms. Each child will be identified on the questionnaire forms by a number, and the list of names and numbers will be kept separately. No one but the researcher will have access to the questionnaires. They will be used for the study only.

_____ _____
signiture of parent/guardian signature of participant

DAVID B. STEVENS M.D.
CHIEF OF STAFF

SHRINERS HOSPITALS FOR CRIPPLED CHILDREN

LEXINGTON UNIT
1900 RICHMOND ROAD
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POTENTATES OF
FOLLOWING TEMPLES

ALADDIN
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AL MENAH
ANTIOCH
BENI KEDEM
EL HASA
KERBELA
KOSAIR
MURAT
NEMESIS
OLEIKA
OMPAH
SYRIAN
TADMOR

February 24, 1987

Dear Teen:

Shriners Hospital is very supportive of all research projects that will improve our ability to provide better services and care for our patients. This letter is written to encourage you to participate in the research project being conducted by Lou Eckert as a part of her doctoral studies at the University of Cincinnati. The information you provide Ms. Eckert will add to our understanding of the thoughts, feelings, and beliefs of teenagers with Spina Bifida. This knowledge can be used to help the health care team at Shriners Hospital design programs to better meet the needs of children and teens with Spina Bifida.

We know that teens are very busy people and that it is sometimes hard to squeeze in one extra activity. Therefore I want to thank you now for your personal contribution of time, effort and energy to this project, it is deeply appreciated.

Sincerely,

Betty Presler, R.N., Ph.D
Director of Education & Research

BP/lb

PERMISSION FORM

I, _____, give my permission for the
(print parent's name)

teacher of _____ to fill out the Teacher
(print child's name)

Rating Form of Child's Actual Competence, and to mail this to M.L. Eckart at the University of Cincinnati. I understand that my child's name will not be on the form, and that only the researcher will have access to it.

Signed:

_____
parent or guardian

_____
date

Please print the name of a teacher who knows your child well:

_____
teacher's name.

_____
name of school.

_____
street address, city, state, zip.

MY CHILD'S SELF ESTEEM

Listed below are some behaviors that all young people show sometimes. Some are thought to relate to good self esteem, and some to a negative self image. Young people differ in the amount that they display these behaviors. Please indicate how frequently your child does each of the things listed below, by putting a number from 1-5 to the right of it. Use the following system:

1	2	3	4	5
frequently		sometimes		almost never

1) Takes charge, gives orders. ___

2) Puts down others by teasing, name calling. ___

3) Uses voice quality appropriate for situation. ___

4) Avoids physical contact. ___

5) Sits with others during social activities. ___

6) Touches others inappropriately. ___

7) Expresses opinions. ___

8) Gives excuses for failures. ___

9) Works cooperatively in a group. ___

10) Glances around to monitor others. ___

11) Faces others when speaking. ___

12) Brags excessively about skills, appearance. ___

13) Maintains eye contact during a conversation. ___

14) Verbally puts self down. ___

15) Initiates friendly contact with others. ___

16) Speaks too loudly or abruptly. ___

17) Maintains comfortable space between self and others. ___

18) Does not express views, opinions, even when asked. ___

19) Speaks without hesitation. ___

20) Assumes a submissive role with peers. ___

Dear participant,

Your parents may have explained to you that I am doing a study to find out more about kids with spina bifida and how they feel about different things. I am especially interested in what helps them feel good about themselves. Many people such as doctors, teachers and parents would like to know more about this so that they can help kids who don't feel good about themselves to feel better. I am hoping you will help me with the study by filling out three questionnaires. They ask questions about what <u>you</u> think, and how <u>you</u> feel about different things. Although your feelings may be private, and you may think some of the questions are kind of personal, they are important because the only way I can find out about this is by asking YOU. You will notice that the questionnaires have numbers on top where a person's name would go. You don't have to put your name. That's to protect your privacy, so no one will know exactly what <u>you</u> said to answer the questions. I would like you to put your age, though, and please circle either BOY or GIRL. If you help out by filling out the questionnaires, you will be part of a very important research study. To show my thanks, I would like to send you a free gift in the mail. When you are done with the questionnaires, fill out the enclosed card and mail it with the other materials. You will get a gift in the mail in about 4 weeks.

If you are willing to help out, your mother or father can show you the questionnaires and how to do them. It should only take about an hour to fill them out. Thanks again for your help with this important project.

Sincerely,

M.L. Eckart

DIRECTIONS FOR THE "WHAT I AM LIKE" SCALE

As you can see from the title, this questionnaire is about what you are like, what kind of a person you are, and how you think and feel about different things. It is NOT a test. There is no right or wrong answer to any question. Since kids are different from one another, each one will be putting down something different.

First, let me explain how these questions work. There is a sample sentence at the top of the page - please look at it now. This question talks about two kinds of kids.

What you need to do FIRST is to decide whether you are more like the kids on the left side who would rather play outdoors, or whether you are more like the kids on the right side who would rather watch TV. DON'T MARK ANYTHING DOWN YET. First decide which kind of kid is <u>most</u> like you, and go to that side.

The SECOND thing you need to decide, now that you have decided what kind of kid is most like you, is whether that is only <u>sort</u> of true for you or <u>really</u> true. If it is only <u>sort of true</u>, then you should put a mark in the box under "sort of true"; if it is <u>really true</u>, then put a mark in the box under "really true" (an "x" or a check mark is fine).

Remember, for each question you mark only one box. Sometimes it will be on the right, and sometimes on the left, but for each question you mark ONLY ONE ANSWER. Ok, that was just for practice. Now go ahead and do the same thing for all the other questions.

What I Am Like

B-2121 Age _____ Birthday _____ (Month) _____ (Day)

Boy or Girl (circle which)

SAMPLE SENTENCE

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
(a)	☐	☐	Some kids would rather play outdoors in their spare time	BUT	Other kids would rather watch T.V.	☐	☐
1.	☐	☐	Some kids feel that they are very *good* at their school work	BUT	Other kids *worry* about whether they can do the school work assigned to them.	☐	☐
2.	☐	☐	Some kids find it *hard* to make friends	BUT	For other kids it's pretty *easy*.	☐	☐
3.	☐	☐	Some kids do very *well* at all kinds of sports	BUT	Others *don't* feel that they *are* very good when it comes to sports.	☐	☐
4.	☐	☐	Some kids are *happy* with the way they look	BUT	Other kids are *not* happy with the way they look.	☐	☐
5.	☐	☐	Some kids often do *not* like the way they *behave*	BUT	Other kids usually *like* the way they behave.	☐	☐
6.	☐	☐	Some kids often get *mad* at themselves	BUT	Other kids are pretty *pleased* with themselves.	☐	☐
7.	☐	☐	Some kids feel like they are *just as smart* as as other kids their age	BUT	Other kids aren't so sure and *wonder* if they are as smart.	☐	☐
8.	☐	☐	Some kids have *alot* of friends	BUT	Other kids *don't* have very many friends.	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
9.	☐	☐	Some kids wish they could be alot better at sports	BUT	Other kids feel they are good enough at sports.	☐	☐
10.	☐	☐	Some kids are *happy* with their height and weight	BUT	Other kids wish their height or weight were *different*.	☐	☐
11.	☐	☐	Some kids usually do the *right* thing	BUT	Other kids often don't do the right thing.	☐	☐
12.	☐	☐	Some kids don't like the way they are leading their life	BUT	Other kids *do* like the way they are leading their life.	☐	☐
13.	☐	☐	Some kids are pretty *slow* in finishing their school work	BUT	Other kids can do their school work *quickly*.	☐	☐
14.	☐	☐	Some kids are kind of *hard* to like	BUT	Other kids are really *easy* to like.	☐	☐
15.	☐	☐	Some kids think they could do *well* at just about any new outdoor activity they haven't tried before	BUT	Other kids are afraid they might *not* do well at outdoor things they haven't ever tried.	☐	☐
16.	☐	☐	Some kids wish their body was *different*	BUT	Other kids *like* their body the way it is.	☐	☐
17.	☐	☐	Some kids usually *act* the way they know they are *supposed* to	BUT	Other kids often *don't* act the way they are supposed to.	☐	☐
18.	☐	☐	Some kids are *happy* with themselves most of the time.	BUT	Other kids are often *not* happy with themselves.	☐	☐
19.	☐	☐	Some kids often *forget* what they learn	BUT	Other kids can remember things *easily*.	☐	☐
20.	☐	☐	Some kids are always doing things with *alot* of kids	BUT	Other kids usually do things *by themselves*.	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
1.	☐	☐	Some kids feel that they *are better* than others their age at sports	BUT	Other kids *don't* feel they can play as well.	☐	☐
2.	☐	☐	Some kids wish their physical appearance was *different*	BUT	Other kids *like* their physical appearance the way it is.	☐	☐
3.	☐	☐	Some kids usually get in *trouble* because of things they do	BUT	Other kids usually *don't* do things that get them in trouble.	☐	☐
4.	☐	☐	Some kids *like* the kind of *person* they are	BUT	Other kids often wish they were someone else.	☐	☐
5.	☐	☐	Some kids do *very well* at their classwork	BUT	Other kids *don't* do very well at their classwork.	☐	☐
6.	☐	☐	Some kids wish that more kids liked them	BUT	Others feel that most kids *do* like them.	☐	☐
7.	☐	☐	In games and sports some kids usually *watch* instead of play	BUT	Other kids usually *play* rather than just watch.	☐	☐
8.	☐	☐	Some kids wish something about their face or hair looked *different*	BUT	Other kids *like* their face and hair the way they are.	☐	☐
9.	☐	☐	Some kids do things they know they *shouldn't* do	BUT	Other kids *hardly ever* do things they know they shouldn't do.	☐	☐
10.	☐	☐	Some kids are very *happy* being the way they are	BUT	Other kids wish they were *different*.	☐	☐
11.	☐	☐	Some kids have *trouble* figuring out the answers in school	BUT	Other kids almost *always* can figure out the answers.	☐	☐
12.	☐	☐	Some kids are *popular* with others their age	BUT	Other kids are *not* very popular	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
33.	☐	☐	Some kids don't do well at new outdoor games	BUT	Other kids *are* good at new games right away.	☐	☐
34.	☐	☐	Some kids think that they are attractive or good looking	BUT	Other kids think that they are *not* very attractive or good looking.	☐	☐
35.	☐	☐	Some kids are usually very *kind* to others	BUT	Other kids *wish* they would be *kinder* to others.	☐	☐
36.	☐	☐	Some kids aren't very happy with the way they do alot of things	BUT	Other kids think the way they do things is *fine*.	☐	☐

Susan Harter, Ph.D., University of Denver, 1983.

DIRECTIONS FOR THE "WHAT I THINK" SCALE

This next questionnaire is called the "What I Think" scale. It asks you to tell whether a sentence is "true" or "not true" FOR YOU. Just like on the other questionnaires, we want to know what YOU really think. It's not a test. Since kids have different ideas about things, each one will put down something a little different.

What I want you to do is to read each sentence and decide whether that sentence is very true, sort of true, not very true, or not at all true for you as a person. Let me give you an example. If the sentence says, "I like to watch TV", some kids REALLY like to watch TV, so they would put a 4 for "very true". Other kids like to watch TV SOMETIMES, so they might say the sentence is "sort of true" for them, and put a 3. Some kids only like to watch TV ONCE IN A WHILE, so they would put a 2 for "not very true". And some kids NEVER like to watch TV, so they would say the sentence is "not at all true" for them. They would put a 1.

So, you need to read each sentence and then decide how true it is for you. Is it very true, sort of true, not very true or not at all true? Put the right number for whichever one you pick. Ok, now that you have the idea, go ahead and start with the first question.

....4.....3.....2.....1.....
very true sort of true not very true not at all true

___ 1. When I win at a sport, a lot of times I can't figure out why I won.

___ 2. When I am unsuccessful, it is usually my fault.

___ 3. The best way for me to get good grades is to get the teacher to like me.

___ 4. If somebody doesn't like me, I usually can't figure out why.

___ 5. I can be good at any sport if I try hard enough.

___ 6. If an adult doesn't want me to do something I want to do, I probably won't be able to do it.

___ 7. When I do well in school, I usually can't figure out why.

___ 8. If somebody doesn't like me, it's usually because of something I did.

___ 9. When I win at a sport, it's usually because the person I was playing against played badly.

___10. When something goes wrong for me, I usually can't figure out why it happened.

___11. If I want to do well in school, it's up to me to do it.

___12. If my teacher doesn't like me, I probably won't be very popular with my classmates.

___13. Many times I can't figure out why good things happen to me.

___14. If I don't do well in school, it's my own fault.

___15. If I want to be an important member of my class, I have to get the popular kids to like me.

....4.....3.....2.....1.....
very true sort of true not very true not at all true

___16. Most of the time when I lose a game in athletics, I can't figure out why I lost.

___17. I can pretty much control what will happen in my life.

___18. If I have a bad teacher, I won't do well in school.

___19. A lot of times I don't know why people like me.

___20. If I try to catch a ball and don't, it's usually because I didn't try hard enough.

___21. If there is something that I want to get, I usually have to please the people in charge to get it.

___22. If I get a bad grade in school, I usually don't understand why I got it.

___23. If somebody likes me, it is usually because of the way I treat them.

___24. When I lose at an outdoor game, it is usually because the kid I played against was much better at that game to begin with.

___25. When I win at an outdoor game, a lot of times I don't know why I won.

___26. When I don't do well at something, it is usually my own fault.

___27. When I do well in school, it's because the teacher likes me.

___28. When another kid doesn't like me, I usually don't know why.

___29. I can be good at any sport if I work on it hard enough.

___30. I don't have much chance of doing what I want if adults don't want me to do it.

HOW I FEEL

Kids with spina bifida all have different feelings about what it's like to be a person with a physical handicap. Listed below are some things kids have said about what they think, and how they feel, about having spina bifida. I'd like to find out how many other kids agree with each statement. Please read each sentence and use a number from 1-5 to show whether you agree or disagree, using the scale below:

1	2	3	4	5
strongly disagree		not sure		strongly agree

1) I believe that being a person with a physical handicap can be a positive experience. ___

2) I would rather spend time with other kids who have a handicap than with kids who don't. ___

3) As I get older, I would like to get involved in causes that will help all people with physical handicaps. ___

4) The most important thing about me is my physical self. ___

5) I usually feel good about being around other kids who have physical handicaps. ___

6) I think that kids who don't have handicaps look better and express themselves better. ___

7) I feel uncomfortable around people with physical handicaps. ___

8) People who don't have handicaps are not nice to people who do. ___

9) I feel that having a physical handicap is not always good. ___

10) When someone with a physical handicap does something great or famous, I feel proud for all people with physical handicaps. ___

11) I wouldn't like to be in a club or group if no other kids with physical handicaps were involved. ___

....4.....3.....2.....1.....
very true sort of true not very true not at all true

___31. When I get a good grade in school I usually don't know why I did so well.

___32. If someone is mean to me, it's usually because of something I did.

___33. When I play an outdoor game against another kid, and I win, it's probably because the other kid didn't play well.

___34. A lot of times I don't know why something goes wrong for me.

___35. If I want to get good grades in school, it's up to me to do it.

___36. If the teacher doesn't like me, I probably won't have many friends in that class.

___37. When good things happen to me, many times there doesn't seem to be a reason why.

___38. If I get bad grades, its my own fault.

___39. If I want my classmates to think that I am an important person, I have to be friends with the really popular kids.

___40. When I don't win at an outdoor game, most of the time I can't figure out why.

___41. I can pretty much decide what will happen in my life.

___42. If I don't have a good teacher, I won't do well in school.

___43. A lot of times there doesn't seem to be any reason why somebody likes me.

___44. If I try to catch a ball and I miss it, it's usually because I didn't try hard enough.

___45. To get what I want, I have to please the people in charge.

12) People, whether they have a handicap or not, all have strengths and weaknesses. ___

13) Sometimes I feel guilty about the things I think about people with handicaps. ___

14) I believe that because I have a physical handicap, I work harder than other kids do. ___

15) I dislike being with a group of kids who don't have a handicap. ___

16) I think about myself a lot as someone with a physical handicap. ___

17) I don't like it when people compare me to other kids with physical handicaps. ___

18) I feel proud when I think of how hard I have worked to do things in spite of a physical handicap. ___

19) I would rather spend time with other kids who do not have handicaps than with those who do. ___

20) I would like to read more books about, and find out more about, people with handicaps who have become famous or successful. ___

That's the end of the questionnaires. Thank you again for helping with this important project! Please give the booklet to your parents and ask them to put it in the envelope and mail it back to me. They will have to flatten it out, with the staples up, and fold it in 3 like a business letter. Don't forget to sign the gift card and put it in the envelope also, so that you can get your solar calculator in the mail.

THANKS AGAIN!

University of Cincinnati

McMicken College of Arts and Sciences

Department of Psychology

Dyer Hall (ML 376)
Cincinnati, Ohio 45221-0376

Dear Parent;

Recently you were contacted by mail about participating in a research survey. This is part of an ongoing project to find out more about young people with spina bifida and what helps them to feel good about themselves. This research will help not only professionals, but also parents like yourselves, and eventually many children and teens.

Some families have already replied to the questionnaires and returned them to me. If you have done this, I would like to thank you again for your help. If not, I would like to ask you again to please take some time to look over the anonymous questionnaires and give them to your child. Most families have found that this takes only an hour or so. Because I know that teens are very busy people, I am offering your child a free gift to thank him or her for participating. You and your child will also know that you helped with an important research study, and I will send you the results of this study in about six months.

If you wish to participate, but have misplaced the questionnaires, or if the spaces on the questionnaires are too small for your child and you would like a "large print" copy, please contact me at the above address and I will send you another packet.

Thank you again for your time.

Sincerely,

M. L. Eckart

Marylou Eckart, M.A.

An affirmative action/equal opportunity institution

University of Cincinnati

McMicken College of Arts and Sciences

Department of Psychology

Dyer Hall (ML 376)
Cincinnati, Ohio 45221-0376

Dear Parent;

Recently you and your family were asked to participate in a survey concerning teenagers with spina bifida and what helps them to develop a positive self esteem. Some families participated, and we appreciate their participation. Other families did not participate, and we wonder what the reasons are. (If you wish to participate and have not already done so, it's not too late. If you need another copy of the questionnaire, send me a note in the postage paid envelope and I'll get it right out to you.)

If you did NOT participate in this survey, I hope you will help out by taking a minute now to fill out and return the brief questionnaire below. This questionnaire is completely anonymous. The information that it provides will be very helpful to me and to the research team in interpreting our results. To fill it out, simply choose either category A or B, and check all that apply. Return this page in the enclosed envelope.

A) MY FAMILY WISHED TO PARTICIPATE BUT COULD NOT, BECAUSE:
(Check all that apply)

___ My child was unable to complete the questionnaires.
___ My child did not wish to fill out the questionnaires.
___ We simply did not have time to do it.
___ Other (Please explain) _____

_____

_____

OR

B) MY FAMILY DID NOT WISH TO PARTICIPATE, BECAUSE:
(Check all that apply)

___ We feel that it is an invasion of our privacy.
___ My child has participated in too many research projects.
___ We are just not interested.
___ We were afraid that it might upset our child.
___ Other (Please explain) _____

_____

_____

Thank you for your time and help.

Sincerely,

M.L. Eckart, M.A.

An affirmative action/equal opportunity institution

LETTER TO TEACHERS - ON U.C. LETTERHEAD

Teacher's name
Name of School
Address
City, State

Dear Ms./Mr. -----;

I am a graduate student at the University of Cincinnati, currently involved in a research project designed to find out more about the factors affecting self esteem in children with physical handicaps. The family of one of your pupils, (student's name), has agreed to help by participating in this study. I am hoping that you will also agree to help with part of our research.

Enclosed you will find a copy of the School Competence Inventory. Although I know that as a professional you have many demands on your time, I hope that you will take a few minutes now to fill out this brief questionnaire and return it in the postage-paid envelope. A permission form, signed by the student's parent, is enclosed. This questionnaire will be very helpful to us in our research. To thank you for your help, I will be glad to share the results of the study with you once it is completed. The study may take up to six months, so if you do wish to receive a copy of the results, please enclose a permanent mailing address.

Thank you for your time.

Sincerely,

M.L. Eckart, M.A.

TEACHER'S RATING SCALE OF CHILD'S ACTUAL COMPETENCE

Child's name _____ School typ : (circle one) K-8 Jr. High Sr. High Classroom type: (circle on regular special

For each pupil, please indicate what you feel to be the child's actual competence on each question, in your opinion. First decide what kind of pupil he or she is like, the one described on the left or right, and then indicate whether this is just sort of true or really true for that individual. Thus, for each item, check one of four boxes.

	Really True	Sort of True				Sort of True	Really True
1.	☐	☐	This pupil is really good at his/her school work	OR	This pupil can't do the school work assigned	☐	☐
2.	☐	☐	This pupil finds it hard to make friends	OR	For this pupil it's pretty easy	☐	☐
3.	☐	☐	This pupil does really well at all kinds of sports	OR	This pupil isn't very good when it comes to sports	☐	☐
4.	☐	☐	This pupil would be better if s/he changed alot of things about him/herself	OR	This pupil is fine the way s/he is	☐	☐
5.	☐	☐	This pupil often forgets what s/he learns	OR	This pupil can remember things easily	☐	☐
6.	☐	☐	This pupil has alot of friends	OR	This pupil doesn't have many friends	☐	☐
7.	☐	☐	This pupil is better than others his/her age at sports	OR	This pupil can't play as well	☐	☐
8.	☐	☐	This pupil usually acts appropriately	OR	This pupil would be better if s/he acted differently	☐	☐
9.	☐	☐	This pupil has trouble figuring out the answers in school	OR	This pupil almost always can figure out the answers	☐	
10.	☐	☐	This pupil is popular with others his/her age	OR	This pupil is not very popular	☐	
11.	☐	☐	This pupil doesn't do well at new outdoor games	OR	This pupil is good at new games right away	☐	
12.	☐	☐	This pupil could do alot of things better	OR	The way this pupil does things is fine	☐	

COMMENTS:

FOLLOW-UP LETTER TO TEACHERS - ON U.C. LETTERHEAD

Teacher's Name
Name of School
Address
City, State

Dear Mr./Ms. (Teacher's Name);

Recently you were contacted about participating in a research project designed to find out more about the factors affecting self esteem in children with physical handicaps. The family of (Child's Name) , a pupil who was in your class last year, have given their permission for you to complete the School Competence Inventory and return it to me. If you have already done so, I thank you for your help. If not, I hope that you will take a few minutes now to fill out this brief questionnaire and return it in the postage-paid envelope. To thank you for your help, I would like to send you the results of the study once it is completed. If you wish to receive a copy of the results, please enclose a permanent mailing address.

Thank you for your time.

Sincerely,

M.L. Eckart, M.A.